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THE CAMERA

AN ILLUSTRATED MAGAZINE DEVOTED TO THE
ADVANCEMENT OF PHOTOGRAPHY ∴ ∴ ∴

THE CAMERA PUBLISHING COMPANY
PHILADELPHIA

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Some Aspects of Perspective

By C. H. Claudy



COMMON statement, often made in the photographic magazines, is to the effect that the focal length of a lens has, in itself, nothing to do with perspective. It is the position of the camera, with reference to the object photographed, which determines the perspective. "Perspective," as used here, really means the angles of view the object in nature subtend to the eye. All pictures made by a camera have perspective, otherwise they would not be pictures at all; but the perspective of some, from the artistic standpoint, is superior to that of others, and the superiority lies both in the angle of view included and the angles of view (quite a different thing) which the objects subtend to the eye.

I was recently interrogated regarding the above statement by a gentleman who thought he had proved it wrong. His argument was as follows:

"If I stand one hundred feet from an object—say, a statue—behind which is a building, and make a photograph with a lens of—say, six inches focus—I get a certain result. If, now, I move off two hundred feet and take a photograph with a lens of twelve inches focus, I get a result in which the statue is exactly the same size, but the building behind the statue is larger in the second picture than in the first. How, then, can it be true that the perspective is controlled solely by the position of the camera and not by the lens?"

This is an ingenious presentation of a case where the fact that there are two objects at different distances from the camera complicates the question to the casual eye. But the gentleman making the argument lost sight of the fact that in doubling the distance from his camera to his statue, and doubling the focal length of the lens, he had not doubled the distance between the camera and the building behind the statue. Had he been able to move the building back, as he moved the camera forward, so that the three objects—camera, statue and building, occupied the same *relative* positions with regard to each other, his building

would have been the same size as in the first picture. But, although by doubling the distances, and doubling the focal length of the lens, he obtained a picture the same size as that made with the smaller lens at the first distance, the perspective would have been vastly different. This is not guesswork, but is to be clearly seen in the accompanying diagram.

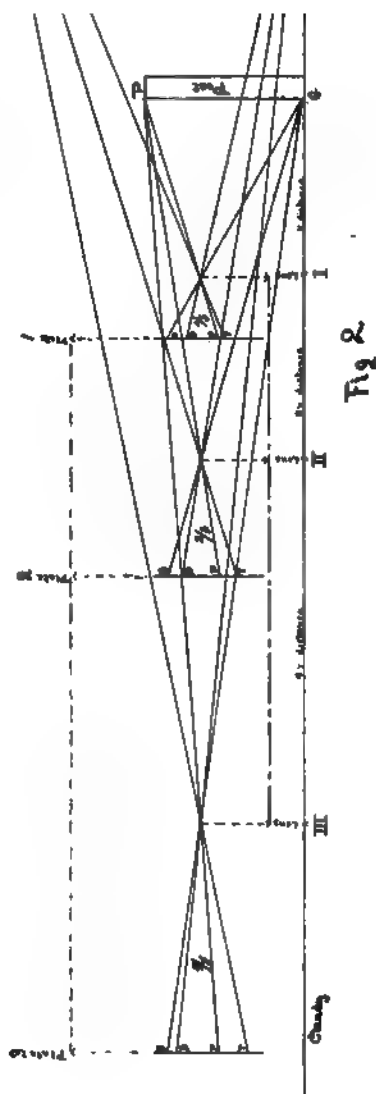
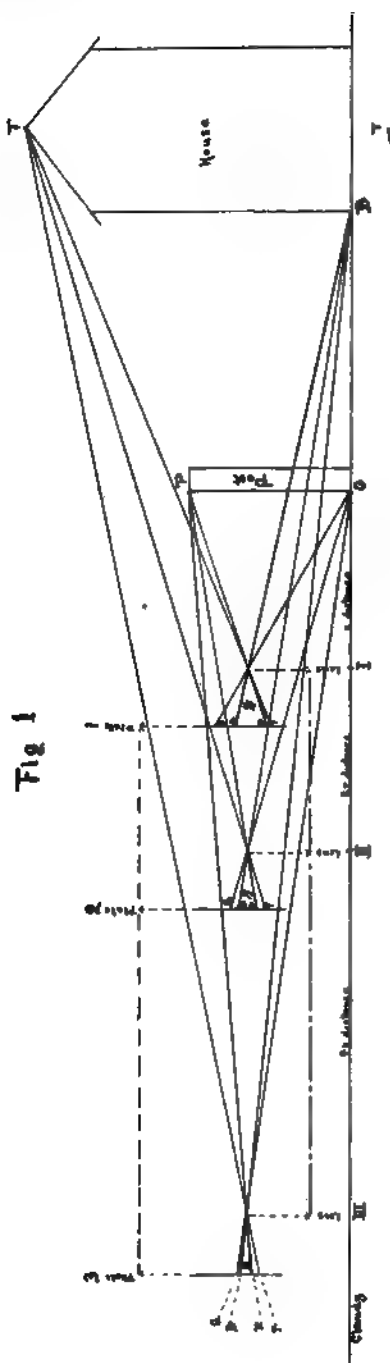
Please don't pass these diagrams by because they look complicated. Each of them is three diagrams in one, which makes them look like a geometrical spider-web gone wrong, but as a matter of fact they are very simple.

Both represent a house, a post in front of it, and the results in point of perspective to be had by photographing these two objects with cameras at different distances and with lenses of different focal lengths. Before explaining what I have shown in these diagrams, let me explain just which is what on the drawings themselves.

T and B on the house stand for top and bottom. On the upright lines, marked as Plate 1, Plate 2 and Plate 3, these letters appear together with P and G, which represent the post (at the top) and the ground, where the post enters it. The letters on the plate lines, therefore, indicate these points as they are formed by the light rays, represented by the straight lines drawn from the points themselves to the plate. Where the light rays cross will be found marked I lens, II lens and III lens. These "lenses" are but points—pin holes, let us say, or any lens sufficiently stopped down to give perfect depth to the picture of both house and post.

If Figure 1, I lens, is X distance from the post, X may represent anything you want. It has a focal length of $1/f$ —that is, one focal unit. This also can be what you please. In Figure 2, lens II, is 2 X distance from the post—twice the distance of I lens. And lens II is $2/f$ in focal length—twice as long focus as lens I. III is 4 X distance—four times as far from the post as lens I and twice as far as lens II, and the focus of the lens is $4/f$ —four times as great as lens I and twice as great as lens II. This drawing represents the gentleman's argument—when he doubles his distance from the statue (here a post) he doubles the focal length of his lens. I have also made him quadruple his distance from the statue (post) and quadruple the focal length of his lens.

Now, if you will take a pair of dividers and measure on the three lines representing the plates of these three lenses, the distance between the outside points of the picture—the points G and T—you will find, as the gentleman found, that the pictures are all the same size. But when you compare the various points and their relation to each other, you will find an enormous difference, and this difference is the difference in perspective caused by the difference in the position of the camera. For instance, on Plate 1 the distance from G to P is much greater than the distance from B to T. In other words, in the photograph resulting from this negative the post will cover more linear height than the house. In Plate 2 these distances between G and P and B and T are about equal—the house and the post will occupy the same amount of linear space in the print. But in Plate 3 the distance from G to P is much less than from B to T, and the post in the resulting photograph will occupy much less linear space of paper than the



house. Now measure again, and the outside limits of all the pictures will prove the same, *and the distance between G and P will prove the same*; the total size of the picture is the same in each and the *post is the same in each*, yet the house grows larger in proportion all the time.

This, you will observe, is exactly as per the argument of the gentleman on whose contention we are hanging this story. When you double the distance and double the focal length, you get the same size picture. If, as is evident, the perspective is vastly different, what is to prove it is the position of the camera and not the lens which makes the difference? That is the gentleman's question. Here is where Figure 1 comes in. In this drawing I have endeavored to make everything identical with Figure 2, except the focal lengths of the lenses. Here is a house, as before, a post, the same distance in front of it, and three lenses and three plates. Lense I is X distance; lens II is 2 X distance and lense III is 4 X distance from the post, exactly as in Figure 2, but instead of having lenses whose focal lengths are represented by the formulæ $1/f$, $2/f$ and $4/f$, we have here all three lenses of the same focal length, $1/f$ the same as lens I in Figure 2.

A careful comparison of the image points on Plates 1, 2 and 3 in Figure 1 will show that the same proportion hold good that occur in Figure 2. The images on Plates 2 and 3 are, of course, much smaller than on Plates 2 and 3 in Figure 2, but the proportion between the points of the image, P and G, and T and B, are identical. In other words, the perspective is the same, the size alone is different. The difference in size compared to those in Figure 2 is caused by the difference in the focal lengths of the lenses in Figure 2 and Figure 1, but the perspective is not altered at a given distance, be the lens used of long or short focus.

There is no room for argument over this proposition; any one with a mind to understand plain figures and a diagram can prove it for himself by comparing the points on the various plates with a pair of dividers.

Not to mix my readers up too much, I would like to say that there is one particular in which lenses of different focus affect a given picture, even if taken at the same point. It is in regard to the angle of view. This is often confused with perspective, or the angles of view subtended by the objects to the eye, but in reality it is a very different thing. The angle of view of a picture is that portion of it which is included within the limits of the plate, and can be expressed in degrees of a circle. The angles which the various objects in the picture subtend to the eye or the lens may vary in any degree, although the angle of view may be the same. For instance, a pole ten feet from the camera, pole being one foot across, subtends an angle to the eye or the camera of nearly six degrees, while the angle of view of the lens may be sixty degrees. At one hundred feet the pole would subtend an angle of approximately six-tenths of a degree, while the same lens would, of course, include the same sixty degrees of view.

Now, while the angles subtended by objects are governed entirely by the distance of the lens from the objects and not at all by the focal length of the lens, the angle of view of a lens is governed entirely by the relation its focal length bears to the size of a plate.

A seven-inch lens on a five by seven plate, for instance, has an angle of view of a certain number of degrees, differing according as to whether it is measured on the base of the plate, correct measurement, or on the diagonal, an advertiser's dodge, and the same lens on an eight by ten plate will, if it will cover—and a good one will cover—have an angle of view of a much greater number of degrees.

Now, the angle of view the eye takes in is estimated variously, but between fifty and sixty is usually considered correct. Consequently, a picture, to represent in a perspective, which does not seem distorted to the eye, should not include more than sixty, and preferably much less. Understand, I say, "*seems* to be distorted," because, mathematically, it is not a distorted perspective at all. Architects make pillars bulge in the center so they seem straight to the eye—a straight pillar seeming concave. Artists include only what *seems* correct, although more in the view, if correctly rendered with a good lens, may be mathematically undistorted perspective.

However, we make pictures for what they appear, not for what they are. Hence, a long-focus lens—or a lens the focus of which is great compared to the diagonal of the plate it is used on, by including only a limited field, gives us pictures more pictorial than if the same lens was used on a larger plate. But used on a larger plate, as a wide angle lens, and the print then trimmed, we get the same results, of course. Please understand, the drawing, which *seems* right, is made by the lens being long for the plate and including a narrow angle of view. It has nothing to do with the angular perspective proper, which is an affair of distance, and should you use a twenty-five-inch lens on a four by five plate and walk right up on your object, you would get as much distortion as if you used a five-inch lens and then trimmed the picture.

One other point and then I am done: A long-focus lens makes a bigger picture. To include all you want you have to back off from the object. Backing off narrows the angles subtended by the objects and renders them more as the eye sees them. In this particular the long-focus lens is responsible for better pictures than the short, as it makes you get off from the object; but a short-focus lens in the same position would give identical results, only smaller.

If you will take the trouble to repeat in nature the experiments of the diagram, I am sure you would find yourself well repaid, and I am also sure the editor would like to hear of your experiments and reproduce your photos. I need hardly add that I should be delighted to hear from any of my readers in regard to anything they may do along this line.





S. S. WHITE, 3d

THE CAMERA Silver Medal
Competition No. 99

Procedure, Sequence, Motion

By H. R. Poore

THE activity of line, discussed in the last instalment, its curvilinear structure and the necessary movement which this entails, develops the idea of relation of parts in sequence and their co-ordination as dependent one upon another in a chain of action. The subtleties of group composition exist just here. Compare the group which is stolid and stagnant with that in which each member aids the movement of the vision, sending the eye through it, as wind passing over a field of grain, and one may get in the comparison some notion of the importance of this quality.

The ripple, the fluency, the give and take of conversation, the progression of consequences, the passage of ideas as they alight, possess, convince, are accepted and in turn projected—this is the coin of the artist in circulation.

Take the simple example of Messonier's "Sign Painter." The limner, full of his subject, conception, detail and significance all settled in his own mind, exercises the forbearance of good nature with the other upon whom these are slowly dawning. The movement is unmistakably from painter to officer, and thence to the picture.

Here, then, is the movement, procedure and sequence supported on the wings of thought.

The figures of the picture are in repose; the action is mental, but no less obvious.

From this example in both directions stretches out this principle of interdependence of parts toward the more subtle, intricate, naïve and critical conception of it and toward the hard and fast necessities of strong construction.

The most complete adjustment of ten pins on an alley is in such a formation that this law of sequence proves itself complete when the king-piece is given motion. This means that every one of the ten is struck. We bowl a ten-strike in art in the same way. The position of each component part of the picture with relation to our king-pin is scientific and logical—not accidental. Let there be too few or too many and the machinery, seeking to move in the line of least resistance, is clogged and reports annoyance. Remove the bottles from the sign

WOMAN ON A COUCH

ALEXANDER

painter picture or the trappings on the wall, and reasons would become obvious why they were there. The bottle under the arm holding the palette destroys a light quadrangle which deprived the white shirt of some of its force and that on the tub breaks a right angle, both of which forms are always attractive. The harness performs a like service for the eccentric shape of the wall. If, for instance, another item were added on the ground at the left of the tub, we would feel the inclusive structure persisting too far. Free access to the two figures is better.

The surest and most palpable form of construction for this quality is the curved line where movement and sequence are necessarily continuous. In such an example as the "Woman on a Couch," by Mr. Alexander, the idea of movement has the greater significance, though the figure is in repose. There is one line and another and still another insisting upon a graceful sweep. We follow from start to finish across the canvas, and what impresses us as continuity effects the greater quality—unity.

SARA BERNHARDT

CLAIRIU

DESCENT FROM THE CROSS

RUBENS

If this artist had seen the lady lying upon the couch, displaying no grace of line in form or clothes, he would not have paused to paint her, no matter how estimable she might have been as to good looks. Therein lies the difference between the portrait painter and the artist who creates beauty. They labor with different points of view. Yet, the larger quality may be made to inhere, as with the pendant to this, Clairiu's "Sara Bernhardt," which is a portrait-making use of the decorative line, and through that unmistakable intention raising it to a higher level.

HARVBSTERS

L'HERMITTE

PORTRAIT

VAN DYCK

We have the same feeling of continuity regarding Rubens' "Descent from the Cross." Its great, sweeping line is complete. Everything is contained in it. The parallel of figures following up and down the central line of light gives emphasis to its importance as structure.

In the picture of the "Harvesters," by L'Hermitte, the curvilinear feeling is expressed in perspective, the line upon which the figures construct.

Starting with the stolid type with the scythe, how easily does the vision run through this chain connecting every action with the mental attitude of each member of this group, and how each in turn, like the figures in a kinetoscope, gives the momentary action of a single figure in the receiving, counting, disposal and content here expressed.

The portrait by Van Dyck exemplifies the same principle of movement in the three attractive spots of its design, from the head down the chain to the left

A Simple Enlarging Apparatus Without Condenser

By Frank E. Huxson

I AM thinking that it is far too often asserted that perfectly satisfactory enlarging by artificial light cannot be done without a condenser, which, if one wishes to enlarge from fair size negatives, means considerable expense. I propose to explain a method which I have adopted for obtaining enlargements with the aid of magnesium ribbon as an illuminant. At a cost of under two shillings I constructed a lamp with which prints may be obtained as satisfactory as those made by day or any other light.

Briefly, my contrivance consists of a large box, made with light traps top and bottom, a provision for a stand camera to be temporarily fitted one end, and sleeve and inspection window of ruby glass, so that magnesium ribbon may be burned behind a piece of ground glass.



Obtain one or two sugar or similar boxes from the grocer's, selecting those which give the widest and stoutest boards; for it is important that our enlarger should be heavy, to stand firmly when in use, and to support the weight of a camera on one end. For a $\frac{1}{2}$ and $\frac{1}{4}$ plate enlarger, a piece of ground glass about 12 inches square will be required. To make the explanation more simple, I will give sizes of my enlarger, which was made for use with a $\frac{1}{2}$ -plate camera, although up till now it has not been used for enlarging other than quarter-plates. First cut out back and front, 18 inches high and 12 inches wide; from the front cut a hole corresponding to the size of the camera to be used, and under the hole, in a position where the camera will rest firmly, fix a stout narrow shelf. From the back cut a hole 6 inches in diameter. It is now necessary to build up the sides (making the box 12 inches from back to front), bearing in mind that the inspection window of ruby glass has to be fixed in one, but it is better to cut the hole for this after the woodwork has been fixed together; the position most suitable can then be easily ascertained.

We must now proceed to construct the light-trap bottom; my sketch, I think, will plainly show the plan I adopt, and I would caution those who consider that a three-leaf trap is going too far, to be wise in time, or they will find to their cost, when the apparatus is finished, that magnesium light wants different treatment in trapping to a dark-room lamp. A bottom can be fixed, with a hole about three inches across, nearly the whole width of the box and near the back. Then two dummy bottoms, extending nearly across in opposite directions, can be fitted, being firmly nailed to three sides, the fourth and opposite end being left open. Four pieces of wood to act as feet must be fitted to the bottom corners.

For the top, which is removable, a piece of wood must be edged so that it will fit tightly over; a hole should be cut in the centre, and a light trap fitted in a similar manner to the bottom, except in this case, instead of fixing to the box itself, a frame of wood on three sides must be attached before the cover is fixed, so as to give an air exit on one side only, which in this case must be at the back. Grooves should now be nailed inside for the insertion of the ground

glass, 6 inches from the front. A piece of felt should be nailed round the camera aperture to secure a perfect fit and prevent egress of light. The hole having been cut for the ruby glass about two by three inches, and the glass fitted in position with glued strips of tape, all the joints in woodwork should be covered inside and out with brown paper. If the wood is rough, a covering of brown paper all over outside will greatly improve the appearance. It now only remains to affix a sleeve, made from an old focussing cloth, to the aperture at the back, and to drive a nail in a convenient position inside for the magnesium ribbon to hang on, when the thing is complete.

For focussing, the ground glass should be removed and a small lamp inserted, with which it will be quite easy to focus. When all is ready, remove the lamp, insert ground glass and a piece of lighted candle, hang the ribbon on the nail, and close the lid. The paper having been fixed on the easel, one arm is inserted in the sleeve, and, holding a small pair of pliers, the ribbon is picked up, lit by the candle, and waved about as evenly as possible behind the ground glass, the whole being carried on by inspection through the ruby window.

As regards exposure, a thin negative, enlarging from $\frac{1}{4}$ -plate to 10 by 8 with F/8 and Barnet bromide, 12 inches of ribbon is sufficient, which, by the way, should be curled into a spiral, as it is much easier to manage in this form.

To anyone who does not possess an enlarging lantern, I would say give this method a trial; if you carry it out as I have outlined above, you should be successful.—*The Amateur Photographer*.



Exposure and Development

By Felix Raymer



HERE are, indeed, few operators and dark-room men who understand the proper relation existing between the exposure of the plate and its development. If this were but understood there would be better work made and with much less trouble. In fact, I believe nine-tenths of the "lighting effect" depends upon the exposure and development. I have for many years been so situated that I can pay particular attention to this one phase of negative making, and I have often marveled at the difference made by the various operators in the duration of exposure on the same subject. Often a subject will be posed, lighted and focused, and following each other in rapid succession, there will be twenty-five operators each making the exposure for himself, and the duration of exposure will range from one-half second to perhaps three seconds, and when all negatives are shown, there will, of course, be some difference in the effects of exposure, but all may be so good that a resitting would not be made. Now, the point is: Why can there be such a difference in the duration of exposure and yet all negatives be good?

It has been my experience that when the subject has been correctly posed and lighted, there is a greater latitude permissible in the exposure than there is when the lighting has not been correctly made. When I refer to the lighting as being

correctly made, I mean most particularly, the *direction the light takes in falling on the subject*, and not its intensity or strength of light—that is, whether it shall be a strong, contrasty result, or one of softness and roundness, is *controlled entirely by exposure and development*. There is a certain relation existing between the highest lights on the face and the deepest shadows, and when this relationship is established the exposure and development will make the effect of lighting whatever the operator wants it. The relation between the highest lights and the deepest shadows is established as soon as the subject is made to appear true to nature—that is, if we are making the picture of a man we must show that he is flesh and blood. To do this we must be able to see the flesh and the blood in his face. This is not a difficult matter if we are using a ground-glass light, for it is an *exceedingly rare case in which the light from such a skylight will be so strong as to destroy the flesh and blood in our subjects*. In fact, it is so rare that I feel inclined to say it does not exist, but in the use of a clear-glass light it is a common thing to experience such an effect, although it can easily be corrected by drawing white curtains over the light in order to tone down its strength as it rests on the subject. On the other hand, it is equally as seldom that we need a reflector when we are using a ground-glass light. It is a case of "What is sauce for the goose is sauce for the gander," for whilst the ground glass softens the lights in the face, it is bringing them down to a proper relation with the shadows so that there is flesh and blood in all parts. Now, when the exposure is given on such a lighting, the operator must have fully established in his own mind the relation existing between his exposure and the development of it. It is a well-known fact that three operators will give three different exposures on the same subject, and all three secure good negatives. Why this is so no one can tell, but if it were possible for one to make up a lighting and tell all operators to give an exposure of two seconds, think what a good thing it would be for the plate makers, for they could then publish a short article on the back of each box of plates and designate the exact exposure to be given that box of plates.

After the lighting is made, and there is flesh and blood in all parts, then comes up the question of effect. If three operators stand "side by side" and criticise it, there will be three opinions, one saying it is just right; the second, that it is too harsh, and the third, that it is too flat. I have seen this done dozens of times, but when the negatives are made, I say positively, if the exposure is regulated for what each of these men want, and the developing is in relation to the exposure given, each will get what he wants. If the one saying the effect is just right will give his normal exposure and develop normally, he will get a normal negative. If the one saying the effect is too harsh will give longer exposure than his normal and develop in relation to the exposure given, he will get the effect he likes, whilst the one thinking it flat will shorten the exposure from his normal and develop in relation to the exposure given and he will get the effect he likes. Therefore, I again say, that nine-tenths of the *effect* in lighting is controlled by the exposure and development. So often operators fuss and fume over a certain effect when that effect could be secured by simply lengthening or shortening the exposure and then developing for that exposure.



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LOUIS R MURRAY

SEA OFF OSAKA, CHINA

THE CAMERA Bronze Medal
Competition No. 99



Printing in Ferro-Prussiate

By Chas. S. Taylor

THAT THE amateur photographer is blind to the many merits of the condemned blue-print is a photographic mystery—a singular aversion for a really meritorious printing method. For some apparently unaccountable reason the amateur, yea, even the beginner, fights shy of the blue-print. Why is this so? Is it because this printing process is so woefully lacking in those desirable qualities possessed by other mediums? No; I don't think the average worker has a single logical excuse for persistently ignoring the blue-print, unless one could call ignorance a pardon.

The amateur in his early photographic days often commences printing his by no means perfect negatives upon blue paper. It is during these trying times, when experience and general knowledge is most conspicuous by its absence, that he uses and condemns to oblivion this process. An amateur friend of mine who is a producer of photographs upon the latest improved "snap-shot" plan, recently told me "that the blue-print was not for him." Upon asking why, he said: "It is too blue, too white and too cheap." This is probably the point of view taken by the majority, who all agree that the blue-print is all right for making copies of drawings and plans, but woefully inefficient for the photographic print.

This prejudice is unreasonable, although the uniformly poor quality of the prints made upon the commercial brands of paper cannot but encourage this view. But one should not give up this process simply because the product of the manufacturer fails to work to our entire satisfaction. The reason why the boughten ferro-prussiate paper does not produce the best result is altogether due to the age of the coating. The best prints can only be obtained by using absolutely freshly prepared stock. The paper as ordinarily purchased frequently lies upon the shelf of the dealer for some time, and is rarely fresh, or at any rate that has been my experience. It is easily found out why freshly coated paper gives better prints, and that such paper must be used to produce the highest results can be demonstrated by coating your own paper, printing while fresh and comparing the resulting prints with any blue paper on the market. This comparison will open your eyes and providing a good average negative is printed from, the much run-down blue-print will henceforth assume a place of no little importance in the number of your present used printing mediums.

Before taking up the actual mode of preparing the paper, it is well to acquaint the reader with the principles employed, and a brief outline of the history of the "iron" method may prove interesting reading for inquiring minds.

The blue-print is not a discovery of modern days, for its birth dates back to the year 1725. As applied to photography, however, the compounds of iron were first called to general notice by Sir John Herschel, who issued a booklet of the ferro-prussiate, or blue process. The principle discovered and which is described in Herschel's pamphlet, is to the effect that the ferric salts of iron, upon the exposure to light, are reduced to the ferrous salts, an example of this change will clear up the technical fog.

If we coat a piece of paper with a solution of ammonio-oxalate iron (15% solution), expose under a negative, we get a weak image composed of ammonio-ferrous oxalate. By developing this printed paper with a solution of potassium ferricyanide (15% solution) and afterward washing away the unaffected ferric salts, we get a permanent blue image of ferrous ferricyanide, sometimes called Turnbull's blue. There are other "ferric" salts which give the same general results, and which are manipulated in a similar manner. By altering the metallic salt which is used in connection with the ferrous image, prints in other monochrome colors are obtained. This is the manner in which the black platinum deposit is produced in the process of that name, and the darkened silver image in the Kallitype method.

With the exception of fresh paper, perhaps the greatest advantage of the home-manufactured blue-print lies in the support or paper used for coating. The greatest drawback to many otherwise attractive printing methods is in the very limited choice of the texture and weight of the paper stock employed. This is often a very serious fault, because it is not often satisfactory to use a certain process (and who has not his favorite mode of expression?) for varying negatives. In the preparation of one's own paper, we have this important factor well under control, and very different effects can be made with the same negative by utilizing different paper surfaces. Still another feature which should do a great deal towards making the blue-print popular, is the wide choice of the material itself. All kinds of paper, from cardboard to tissue and blotting paper can be used, and such fabrics as silk, silkaline, fine canvas and linen are well adapted for sensitizing. This considerable range of support opens up a very interesting field for the production of sofa pillows, window transparencies, book covers, panels and many other attractive and decorative pictures. There is no great difficulty in making these photographs upon the different materials, and I have even printed very pretty views upon a piece of common soft pine, afterwards finishing by staining the wood a dull brown.

After this little chat upon the variations of the usual blue-print, the reader is no doubt eager to commence with the actual working directions. From the beginning I have endeavored to take up the several operations step by step, and to express the subject in as few and clear words as possible.

The choice of the paper is merely a matter of taste and for the first few experiments the ordinary kinds of cream note or bond letter paper may be used. When some experience has been gained the plain photograph papers, as Johnanot, Rives and Steinbach may be preferred. While almost all the best grades of paper contain enough size to make a good surface for the sensitizer, it will do no harm to size them yourself, although this precaution I have not often found necessary. The use of this size is to fill up the pores of the paper or other support and prevent the paper from absorbing too great a quantity of the sensitizing solution. With certain thin and porous papers the "size" is required to keep the printed image from sinking into the paper, *i. e.*, avoiding a dull flat and inlaid effect.

A size that has been largely used by the writer is easily prepared, and the cost is but a trifle: Half ounce arrowroot flour is mixed to a stiff paste with a spoon-



THE CAMERA Competition No. 99
Honorable Mention

OFF TO THE FISHING

ROBT. BURNIE

ful or two of water, carefully rubbing out all lumps. Now add enough warm water to make twenty ounces, and slowly boil until clear. The paper is coated with this "size" by pinning a sheet to a board by the four corners. A small sponge or wad of cotton is now saturated with the arrowroot size and the paper coated by first brushing across then up and down its entire length. This mode of procedure will insure an even distribution of the solution, which is essential for uniform results.

Fabrics such as silk, satin, linen and so on require the use of a different size, and the fabric must be prepared differently. The cloth is first soaked in hot water for ten minutes to remove the "dressing" which it contains; it is then well washed with soap and well rinsed in warm water to remove the soap. The size is thus prepared thus:

One ounce of hard gelatine (soft gelatine is not at all desirable), is soaked in a quart of *cold* water until soft; then heat until dissolved. The fabric is soaked in this solution for fifteen minutes, then hung up to dry. Both the paper and the cloth may be coated and dried in daylight, but care should be taken to dry them in a place free from dust.

The sensitizer used with the best success by the writer differs somewhat from the many formulae given in the text books. One convenient advantage of the formula here given is that the solution can be kept until entirely used. For the worker who only occasionally uses the blue process this feature does away with the rather inconvenient task of weighing out small quantities of chemicals. The two chemicals used in sensitizing are potassium ferricyanide and ammonio-citrate iron.

Potassium ferricyanide is often known as *red prussiate* of potash, and in its chemically pure (C. P.) state comes in clear red crystals free from dirt. Its formula or symbol is $K_6 Te_2 CY_{12}$, and it is soluble in 2.54 parts cold, and in 1.22 parts boiling water, while but sparingly soluble in alcohol. In the solid and in solution it is sensitive to light and should be contained in dark colored bottles, which in turn should be stored in a dark corner. This salt must not be confused with ferrocyanide (yellow prussiate), which is of a different chemical composition and not suitable for the described process.

Ammonio-citrate iron, or as it is usually called, ferric ammonium citrate, is a chemical obtained at every large drug shop, in the form of brown scales. This compound is also sensitive to the light and particularly so to the atmosphere, and the solid as well as the solution should be contained in dark bottles tightly corked. The ammonium citrate should be asked for, as the common iron-citrate (without ammonia) might otherwise be given for the first mentioned. There is another citrate known as "green ammonium-citrite iron," but as it is much more expensive and of but little, if any, advantage, a brief mention is all that is required.

Taylor's Sensitizing Formula:

No. 1 Solution—Potassium ferricyanide, 64 grains; water, 1 ounce.

No. 2 Solution—Ammonio-citrate iron, 100 grains; water, 1 ounce. An equal quantity of No. 1 and No. 2 is used.

NOTE.—These solutions must be contained in dark or covered bottles, bottled separately with tight stoppers and kept from the light. If boiled and filtered water is used no trouble as to their keeping qualities will occur. Mix the solution only just before use, as they will not keep after mixing. The most convenient mode of using the sensitizer is as follows:

Fasten the paper to a board by pinning the four corners. Pour the sensitizing solution into a convenient shallow saucer or dish, and apply solution by means of a wad of cotton inserted in the mouth of a small vial or bottle. The paper should be coated precisely as for sizing, brushing first across then up and down, taking care that the strokes overlap one another. Go over the sheet twice and dry at once by moving to and fro over a lamp. As an aid to correctly judge the dryness of the paper, it is well to remember that when dry the sheet curls with the coated side outside. This rapid drying is required if the most brilliant prints are wanted.

Of course it is understood that both the sensitizing and drying of the paper is done by lamplight only. Daylight, however weak, is much too strong to work by, and it is likely to fog the high lights, causing flat, weak prints.

In sensitizing fabrics I use a much stronger solution and by its aid have managed to produce fairly satisfactory prints upon white buckskin leather.

Taylor's Formula for Fabrics:

No. 1 Solution—Potassium ferricyanide, 130 grains; water, 1 ounce.

No. 2 Solution—Ammonio-citrate iron, 170 grains; water, 1 ounce. Apply to the fabric as directions given for paper, drying over the lamp as before described.

Printing is done in the regular printing frame and in the usual manner. The sensitive side of the paper (yellow side) is placed next to the film side of the negative. Print until the shadows are of a deep bronze color, which under an average negative will probably take five minutes. Thin negatives will be much improved in contrast by printing under several thicknesses of tissue paper and in the shade. Development consists in merely washing out the ferric salts which have not been reduced to the ferrous condition. Wash the prints in running water (or several changes) until all trace of a yellow color has left, and the high lights are perfectly white. Then leave the prints immersed face-side down in a tray of clear water for ten minutes. While this last operation may not be absolutely necessary it greatly assists in removing all discoloration and in clearing up the print.

The after treatment of the blue-print is possible, but I have found this "doctoring" to be generally unsatisfactory. Owing to the cheapness of the process it will be found less expensive to print anew any prints that fail to come up to our expectations. In short, it is easier to print a good blue-print in the first place than it is to bring up to any satisfactory degree one that is a bit off in exposure.

If the reader has faithfully followed me in the foregoing he will have no difficulty in preparing and finishing a blue-print that is worth a ton of the kinds generally seen, and besides enlarging his knowledge photographically he has

secured far more pleasure in the home-made products than it is possible to enjoy when other hands mould the raw material.

Having prepared a number of good blue-prints, one can for the sake of variety convert the blue color to various other tones, more or less satisfactory in character. This brings us to the toning of blue-prints, a process that is simple to manage and low in cost. While the blue-print may be toned or altered in color, and although numerous formulae for this accomplishment have been published, few are capable of really good results. After much experimenting I have chosen a few which produce a pleasing tone, not merely a curious chemical change. Strange as it may read, I have never yet obtained a true black image, in spite of many writers' formulae to the contrary. It is possible to get a very nice gray and a good brown-black, but a true black color has always escaped me. The field is an interesting one, however, and by working along these lines many new and odd chemical changes often occur.

Brown Tones: The previously well-washed and dried blue-print is immersed in a solution of ammonia until it has lost its color. Then rinse print and put in a bath of tannic acid (saturated solution). If color is desired darker, add three drops of ammonia.

Black Tones: Immerse in a diluted solution of ammonia (three drops to one ounce water) until the image has a lilac color. Wash well and put in solution of iron proto-sulphate (50 grains to ounce of water).

NOTE.—This formula gives a very satisfactory brown-black print, and by using a slight increase of the iron proto-sulphate a bluish or purple-black may be secured. This will be found to more nearly produce a true black than any other formula I have ever tried.

Lilac Tones: Immerse blue-print in a diluted solution of borax until desired color is reached. Then wash and dry as usual.

I have now reached the end of my subject, and while a great deal more might be written, I am sure the reader will, after the first reading, learn a great deal about the blue-print, and will by the aid of the directions given, make prints of a better quality. Last, but by no means least, I must urge the worker to proceed with as much care in using the blue process as it is necessary to do with the platinum or other expensive mediums of printing. Do not expose the sensitive paper to an unnecessary amount of light while printing, and do not store paper in other than a dark place. In short, do not handle the paper carelessly because it is only blue paper, and remember that it is the careful worker that is the producer of prints which are really worth while.





AN INDEPENDENT MONTHLY MAGAZINE DEVOTED TO THE
ADVANCEMENT OF PHOTOGRAPHY

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WITH BEST WISHES FOR 1907

Permanency of Prints

The question of the permanency of the photographic and positive on paper is one which is constantly looming up portentously above the photo-horizon. The subject is one demanding a more lengthy discussion than can be given it in the space the editor of *THE CAMERA* has here allotted

When the bromide print was first introduced its superiority in the claim of permanency was maintained and the keeping qualities of the old silver albumen print were suspected. Any one who possesses a collection of silver prints, specimens of which may date back some quarter of a century or more, undoubtedly will notice that some have fallen into the sere and yellow leaf condition, while others are still in their pristine beauty, although the date of their production may antedate the faded ones.

Before making a few brief remarks on the subject we shall call attention to the charming little vignette which *THE CAMERA* presents on its editorial page this month, at the advent of the New Year. The half-tone reproduction was made directly from a photograph taken by the late Mr. Edward L. Wilson. It is a photograph of one of the statues in the department of exhibits at the Centennial Exhibition in 1876, thirty years ago. It is on the old-fashioned N. P. A. albumen paper. Perhaps it may be necessary to say here to the rising generation of photographers that silver prints in those days were made upon paper prepared by the printer himself. He knew nothing of the ready prepared commodities of now-a-days.

The photograph, though a generation back in its genesis, lacks nothing of its original richness, save the gloss which the burnisher put on it.

It has always been claimed that the fading is due to imperfect toning, fixing or washing.

In the majority of case I believe that the root of the destructive agent may be traced thereto. Recently I have reached the conclusion that the method of printing does in many cases affect the permanency of the print; but as this is a subject not to be here discussed, we reserve it for another place, merely desiring to touch upon the topic of the fugivity of the modern print.

Doubts have always existed as to whether gelatine as a vehicle for the sensitive silver salts furnishes as stable products as albumen or gelatine. It is thought that certain chemical combinations not associated with gelatine take place, which mar if they do not completely obliterate the image. We hear a great deal about elimination of hypo,

and it naturally seems strange to the photographer, who is acquainted with the ready solubility of sodium hyposulphite, that it should be so difficult to get rid of that salt and why a good washing or several changes of water should not completely drive out the obnoxious tenant from the fibre of the paper.

A second thought will show him that it is not really the hypo in the film or fibre that is so much to be dreaded as the chemical combination of the hypo with the unreduced silver when the print is exposed to action of light.

Gelatine certainly has a greater tendency to form organic compounds than the other colloids used as vehicles for the sensitive salts. Some of these combinations have been studied by the technologists, but the subject needs further elucidation.

The question of the permanency of prints reminds us that we ought to take into consideration the conditions to which a print is subjected after its production. We have in our possession several old-fashioned panel pictures which are fully twenty-five years old, made by Gilbert and Bacon, of our city. They are what was then called *glacé* portraits, being coated with an enameled surface made by squeegeeing them down to a film of plain collodion, which gave them a mirror gloss much admired in those days. These photographs do not show a trace of any chemical action, either through vapors penetrating the gloss or by the action of light on the image.

Doubtless they were conscientiously toned, fixed, washed, etc., but we are prone to think that it is not to the careful treatment that the permanency is to be traced, but to the protecting armor of the collodion glaze, which prevented noxious gases in the atmosphere from penetrating.

✥

Orthochromatism and Judgment

The subject of orthochromatism is constantly looming up in our photographic magazines, and *THE CAMERA* in especial has been rather strenuous in its advocacy of the color value plate. But despite our efforts and the advice of other editors, the majority of photographers seem perversely blind to the importance of the discovery and still clutch the old heterochromatic

plate, and insist on its paramount virtues. Photographers, as we know, are most conservative, and will maintain, in spite of demonstration, the superior advantage of what they have learned through force of habit. Some day we predict the ordinary plate will be as little used in the studio as the collodion process is now; that is, only for some special purpose, and when that day dawns we shall have work technically and artistically far superior to the best work today. Let photographers expand with the times and instead of being set back by the few apparent difficulties (of little real consequence in themselves) strive by judicious and intelligent use of the orthochromatic plate to make it as easy of manipulation as the ordinary plate. Those initiated, or rather educated, in its use know how to modify even now its manipulation to the requirements of the case. Orthochromatic plates may be utilized in the same way as ordinary plates if the photographer will use the same judgment and good sense he employs in taking a subject upon an ordinary plate. For ordinary cases one does not even need a screen, which we confess is objectionable. It is possible to make polychromatic plates (that is, we have done it ourselves) which work without screens and without prolonged exposure.

We are willing to admit that few factories put such plates on the market (we do know there are such), but the reason that polychromatic plates are not a commercial product is, first, that there is such a limited demand (the result of perverse fogginess), and second, that at present such plates do not keep well. This latter defect might be overcome even by the manufacturer if he should receive encouragement to experiment, but aside from this, why should not the photographer instead of degenerating into a mere button presser, exercise the same pains and judgment in preparing when needed his own polychromatic plate? In the days that are past the photographer was not only an artist, but in a measure a mechanic and a chemist, and withal a broad-minded intelligent man. Let me ask you, "In what magazine nowadays do you see any paper communicated by a professional on a technical subject?" They will give you *ad nauseum* talks about art, but not a line about experience. No, they are content that the intelligent amateur should labor to improve their art and will only grudgingly acknowledge that he has given them something better after the scientist and painter have abundantly demonstrated its worth.

All questions relating to technical matters, processes, working instructions, etc., are referred to competent experts in the particular subject referred to, and the utmost is done to insure reliable and practical answers being given.

Correspondents are requested to first state their case and then number each question; they should also write on one side only of the paper, and enclose correct name and address—not necessarily for publication. No attention will be paid to anonymous communications or those only signed with initials.

We do our best in all cases to publish the replies in our next issue following the receipt of the inquiry, but cannot absolutely guarantee this.

All inquiries should be addressed to THE CAMERA, 123 South Eleventh Street, Philadelphia.

No questions answered by post. No prints criticized.

GASLIGHT OR DEVELOPING PAPERS.—I am a reader of both the English and American photographic magazines. The former refer to Velox and such papers as gaslight papers and the American magazines say developing papers. As an argument, which is the right term, and why?—S. N. E.

In the matter of papers such as Velox, Bromide, etc., the English magazines, in our opinion, correctly say just what is intended when they use the term "gaslight." Platinum Gum Bi-chromate and Kallitype are developing papers, yet they are printed by daylight. THE CAMERA has employed the expression "gaslight" and "developing" paper indiscriminately, but the fact that the papers are developing papers, the distinction, by using the word "gaslight," tells at once the class of paper used. The difference is not worthy of an argument.

PORTRAIT LENSES.—Why will a long focus lens take a better portrait than a short focus lens? For instance, I have a 14-inch lens for portraits and also an 8-inch that I use.—S. E. G.

In answer to this question we would refer our correspondent to the various articles published from time to time in THE CAMERA, incidentally one on the topic published in the December issue. It has become an article of photographic faith that portraiture—that is, correct portraiture—in which the features are properly related demands a long focus lens. The perspective

of the face, so to speak, is better presented with long focus than with short focus lens. With a short focus the features are inordinately presented and so abnormal that even a head possessed of considerable beauty may be made almost a caricature by using a short focus lens. Even to the trained eye there is an appreciable difference between a head taken with an 8-inch and one taken with a 14-inch focus lens. However, by judicious use of varying focal lengths one may be able to overcome or modify facial defects.

■

Is Gelatine Best for Lantern Slides?

The question has recently forced itself upon our consideration, whether, after all, the gelatine plate with all its advantages over collodion is the best medium for production of lantern slides.

Personally, we have found a considerable degree of degeneracy in slides made upon the gelatine plate, after a lapse of time, say four or five years. This deterioration seems to be accelerated where the slide has frequently been subjected to projection in the lantern. The heat seems to be inimical to the film, and in few instances can the deterioration be traced to any error in manipulation.

We have gelatine slides made by some of the best professionals, as well as those made by ourselves, where the probabilities are that the fixing, washing, etc., has been conscientiously accomplished. Nevertheless they have woefully fallen off from their first estate, and are not fit for projection.

This must be due to some inherent lack of resistance on the part of gelatine to heat, inasmuch as slides on albumen and collodion, much older, which have gone through the same fiery ordeal, are not one whit less brilliant and beautiful than when first made. We hardly like to advocate a reversion to old collodion work; in fact, our advice to work the silver bath would hardly be taken seriously now-a-days, still one is loth to see our beautiful work fall so soon into the sere and yellow condition, and would suggest the employment of collodion chloride or carbon, which give results practically indestructible by the energetic action of the great heat now employed in projection.

Bausch & Lomb Optical Co., Rochester, N. Y., have prepared a very interesting booklet on Home Portraiture. They want you to have a copy and know more about Home Portraits and Bausch & Lomb lenses. If you make the request the book will be sent you.

✽

An exhibition of drawings in black and white and color by Miss Pamela Colman Smith will be held at the Little Galleries of the Photo-Secession, 291 Fifth avenue (between Thirtieth and Thirty-first streets), New York, opening on January 5th and closing January 15th. The galleries are open from 10 A. M. till 6 P. M. daily. Sundays excepted.

✽

The December issue of *Camera Work*, No. 17, fully sustains the reputation of this artistic publication, to which photographic workers turn for the latest word of achievement in their art. There are six strikingly beautiful examples by Joseph T. Keisley, also two by F. Benedict Herzog. These latter are prints of the panel compositions which have been the photographic "sensation" of the year, not only among the photographers but among the painters. In connection with these are an article from the pen of Mr. Caffin, the art critic, and on the editorial page a description of Mr. Herzog's method of obtaining these results. Mr. Harry C. Rubincam is represented by a fine piece of work showing the interior of a circus tent during a performance. The last illustration is a still life study by A. Radclyffe Dugmore, in which the delicacy yet strength of finish is admirable. Two portraits by J. Montgomery Flagg showing the progress in photo-portraiture make an appeal to the sense of humor that is as true as it is irresistible, and an article on the London Salon is interesting and instructive. *Camera Work* is published quarterly by Mr. Alfred Stieglitz, 1111 Madison avenue, New York, and the price, \$6.00 a year, seems but a small half of its value.

One of the most complete, artistic and original catalogues of the year is the new catalogue of the Anthony & Scovill Co., Binghamton, N. Y. Everything that a photographer or an engraver may desire will be found in its pages, handsomely illustrated by half-tone cuts showing actually what the article is. Many novelties are mentioned, and an early request should be made for a copy of the catalogue.

✽

The Haloid Company, of Rochester, announce that they have changed the name of their excellent paper from Artona to Kartona, but give no special reason for the change, other than liability of confusion with other names. In our estimation, had they combined the two names in some way they would have, in a measure, conveyed some index of the virtues of the paper. The name was Artona and the photos on the paper exhibiting all the artistic qualities of a negative, and so we would read Arton-a-Kartona.

✽

Daylight development is the headline of one of the "ads" in our advertising pages, and we would advise our readers to look up this "ad" and read it through. In this advertisement Burke & James, Chicago, in our estimation, are pushing "a good thing," for tank development is no longer a "talked of" theory, but is, as they assert, a method that is endorsed by highest authorities, and one that is in use in many professional studios. It has the advantages they claim for it over the ordinary method of developing, and their tank is peculiarly adapted for doing the work in daylight. Those photographers, whether professional or amateur, who are interested in their work cannot afford to be behind the times; therefore we would advise them to see these tanks. Any dealer will be pleased to show them, and no doubt most dealers have them on their shelves. Aside from their utility, the prices are exceedingly low.

THE COMPOSITION OF VELOX EMULSION.—In demonstrating Velox before the Thornton Heath Photographic Society, A. W. Green emphasized the fact that Velox is coated with a chloro-bromide emulsion, and not, as is the case with most other "gas-light papers," simply with a bromide emulsion of slow speed, so that the manipulation which may prove quite satisfactory with other gaslight and bromide papers may be quite unsuitable for Velox.—*Photography*.

There are two qualities which are inseparably combined in a good dry-plate, uniformity and speed. Divorce one from the other and trouble begins. The worker of any brand of dry-plate must be assured not only that his plate is rapid, but be possessed of the confidence that the rapidity is uniform without any deviation. Now, these qualities are the essentials in the manufacture of the Hammer Dry Plate. They have speed and they have a uniformity of speed, they give excellent results and make the operator happy.

We have often been in doubt whether the sponsors of that excellent brand of gas-light developing paper known as Velox had christened it with its euphonious name on account of the Velo (city), "Velocity" or by reason of its velvety (Vel-ox) like brilliancy. It is indeed "Good enough for anyone, and so simple of manipulation that the wayfaring photographer, though a fool, need not err therein. And if he be not a fool, he had better use as a developer the Nepera Solution made by the people who make Velox—inasmuch as it is specially adapted to the manipulation of the paper.

The tank method of development, which was first popularized by the Eastman Kodak Company, is gaining in favor day by day, and the Kodak tank is the acme. It seems reasonable that a slow and gradual evolution of the image should result in the production of a negative in which there is a great range of gradation from high-light to deep shadow. It besides enables the operator to better equalize varying exposures and emancipate him from the drudgery of the dark-room.

Of all the media employed to translate the good qualities of a negative, undoubtedly none compares with platinum. There is a richness and luminousness in the shadows, a wealth of gradations in the half-tones and softness combined with brilliancy in the high-lights. A well-made platinum print is a gem in photographic manipulation, but then one must be sure that the platinum paper is of the proper sort, otherwise the results will be exceedingly tame, flat and unprofitable. One cannot err in trusting to the virtues of the Angelo Black and White Platinum, which is furnished in smooth and rough grades to meet the demands of the artistic photographer.

The "Tessar" lens, made by Carl Zeiss, at Jena, having been very popular with Kodak users, is now offered in a new tube mount from which the cells can be readily removed and screwed into any 4x5 shutter. The "Tessar" is particularly suitable for the 3A F. P. K., and with the compound shutter, the speed of which varies from 1 to 1-250 of a second, makes an excellent outfit. This lens has a speed of F 6.3, and a unique feature is the polished black enamel finish of the mount. On application to E. B. Meyrowitz, 104 East Twenty-third street, New York City, a most interesting catalogue of Carl Zeiss lenses will be sent.

From advance sheets of the new Goerz catalogue we notice that a big improvement has been made in the Sector shutter, and we believe the accompanying description will be of interest. The complete catalogue should be in your hands. A request to the C. P. Goerz American Optical Co., 52 J Union Square, New York, enclosing 10 cents for postage, will secure one on publication day.

In our new XL model we have eliminated the protruding pumps. The XL Sector shutter is perfectly circular in form. The speed is adjustable between 1 second and 1-150 of a second, *bulb*, *time* and *instantaneous* exposure being obtainable with either finger or pneumatic release. The dial for the adjustment of the aperture and the speed indications have been considerably enlarged, the divisions being further apart and consequently more easily

read. The mechanical construction has been improved and simplified. The working parts of steel and brass are contained in an aluminum casing. The front cover serves no other purpose than that of dust cover and carrier of the front combination of the lens. The shutter can thus be worked in all its adjustments with the front cover removed. No other photographic shutter possesses this valuable feature, which insures a perfection of assembling and adjustment of the working parts unallowable in other designs. It makes the shutter absolutely reliable, and secures for it the foremost position among all modern between-lens shutters. The No. 0, 1, 2, 3 sizes of the Goerz XL shutters are now ready for immediate delivery, and can be fitted to our own lenses as well as to those of other manufacture, when the diaphragm aperture does not exceed one and one-eighth inches diaphragm opening nor the tube mount diameter one and five-sixteenths inches. A larger model, with one and one-half inch diaphragm, is in preparation, and will take lenses up to and including the No. 6 Dagor and the No. 3 Celor, or other lenses of corresponding size.

A Brooklyn woman recently obtained judgment for \$1,000 in the Supreme Court against a trading stamp concern for using one of her pictures for advertising purposes without her permission. The stamp people displayed her picture in their show window as a sample of the kind of photographs that could be obtained for a certain number of stamps. The plaintiff objected and the suit followed.

It is only those who have had a past experience in working with old-fashioned lenses (which, by the way, were accounted marvels of speed in their day) that the marvelous velocity of the modern lens is fully appreciated. To those who are fortunate enough to possess a Cooke lens we would say, possess yourself in peace that you have something par excellent in every respect. The construction of the Cooke lens is very simple, so simple that one wonders why manufacturers had not hit upon such a combination before this, besides the minimum amount of light is absorbed on account of the absence of any absorbing medium of cement. We do not marvel that their sale is growing so rapidly.

The popularity of automatic development is rapidly increasing, but the users of developing powders should always have a care in selecting such powders if they have any regard for making good negatives or prints. All developing powders sold in shops are not equally good. Use only those which have received the sanction of the experienced workers and you will not get so soon discouraged in work. The Autogen Powder of Charles Mitchell, M. D., 1016 Cherry street, Philadelphia, if properly used, will enable the novice to produce good negatives and he will find that it is equally applicable to films, plates or paper.

Photography for Students of Physics and Chemistry, by Louis Derr, M. A., S. B. Illustrated. Cloth, 248 pages, \$1.40 net. The Macmillan Co., 66 Fifth Ave., New York, publishers.

The only objection we can offer to this book is its misleading title, which implies that the contents are only for the advanced student, whereas it is so clearly written and the various examples made so plain that even the tyro would have no difficulty in its perusal. The various chapters on lenses are worthy of special commendation and treat this difficult subject in a masterly manner.

The great advance that photography has made is in a good measure due to the generosity with which the votaries of the art communicate their ideas through the various periodicals devoted to photography. *The British Journal Almanac* has always been in the forefront in its endeavor to keep the fraternity photographically well fed, but this year there is almost a plethora of good things of a practical value from well-known writers and experimenters. The subject of lens and photographic optics has received especial attention and may be read with great profit, as the information is conveyed in a way intelligible to the non-scientific readers. G. Gennert, New York, American Sales Agent. Price, 50 cents; postage, 25 cents extra.

The clubbing list of standard magazines, which will be found in our advertising pages, is a money-saver and should appeal to you

The Tank System of Development

MY DEAR TOMMY:

Has the tank system of development come to stay? As Ole Oleson says, "Ay tank so." And why has it come to stay, Tommy? Is there any good reason for tank development besides the excellent one that it saves labor?

There are several good reasons. I know one or two of them and suspect that there are others that I have not yet tumbled to.

The point that naturally first attracts surprised attention to the system is to be found in the fact that plates of widely differing exposures may be placed in the tank at the same time; left there for the same length of time, and, when removed, found each to have the degree of development that corresponds with the exposure, and neither overdevelopment nor underdevelopment. Reasoning by analogy—being guided in thought by the experience gained in developing in the old familiar way with flat trays—you would arrive at the conclusion that the plates of varying exposures would emerge from the tank with densities ranging from practically nothing in sight on the underexposed ones to black opacity on those that were overexposed. This reasoning seems to be sound, but the conclusion arrived at does not fit the facts. Unless the plates are left in the tank for an unreasonably long time—and it has to be a pretty long unreasonable time, too—each plate, on removal, will be found to be correctly developed.

This seems to be astonishing. Every experience that varies from the familiar lines established by precedent is astonishing. When the man drops a few broken raw eggs into the shining plug hat and, after stirring them well and heating the bottom of the hat, or, to be correct, after heating the top of the hat which has been reversed, or turned bottom side up so that the top becomes the bottom—you know, of course, Tommy, that he has to turn the hat upside down so that the eggs will not run out (excuse me for explaining)—any way, Tommy, after he has done all of that and then lifts a twelve-pound jelly roll from the hat and returns the hat to its owner in the audience in perfect order, you are astonished. May be, Tommy, you are not astonished now, but you were the first time

that you saw the trick done. Don't deny it. You certainly expected that the top of the hat that was on its bottom would be all singed up; that the lining would look like an impressionist sunset, and that in the one-round contest between the hat owner and its destroyer you would get your money's worth—and you missed it on every count and were properly astonished until you learned just how the trick was done: how the magician slipped the broken eggs up his sleeve, slipfuddled the hat and finally exhibited the twelve-pound jelly roll as coming from the hat when, as a matter of fact, he had had it in the palm of his hand all of the time. It was all simple enough when you knew how it was done.

Just the same way with tank development, Tommy, you expect to find all sorts of botched up plates coming from the tank because you know that under ordinary circumstances mixed exposures subjected to the same length of development with the same strength of developer would, with a flat tray, turn out plates of all sorts of densities, and you are surprised with the actual results until you learn that the chief reason for the difference lies in the fact that the plates in the tank are vertical—that they are more upright than those in the flat tray—and that the latter are down on their back and cannot help themselves, being at the mercy of the developer.

This does not seem to be a good reason, and, all by itself, it is not any reason at all, but, just the same, it is a good reason, because in the vertical position the only action that the developer has on the emulsion is a purely chemical one, while in the flat position the particles of developer are driven into the emulsion by the power that we have been taught to describe or term as gravitation. When the plates are on end the plane of their surface is parallel with the rays (if rays is not the right word you are at liberty to guess at what I mean and call it anything that you want to) or lines of gravity, and the developer only attacks the silver emulsion in response to the chemical law that insists that the silver compound that has been tampered with by light shall part with its haloid element to just that extent that is measurable by the amount of actinic light that has reached it during exposure. When the plate is lying down

flat in the developer this chemical law is reinforced, gravity drives the developer further into the emulsion, more silver salt parts with its haloid element and considerable agility has to be practised in order to dodge greater density than is desirable.

In the tank with vertical plates, gravity acts as a retarder and bromide is not used; in the flat tray gravity acts as an accelerator and bromide, or much dilution, is in frequent demand.

Gravity is cheaper than bromide.

This, Tommy, is my hypothesis. It is at least as reasonable as that the magician man was able to hold the twelve-pound jelly roll in the palm of his hand.

It is a plausible solution, and ever since Newton's time gravitation has been used successfully as an explanation for all sorts of physical manifestations. I have plenty of precedent for the hypothesis advanced.

* * * * *

Developing agents are numerous. When they are coal-tar derivatives we explain their action by alleging that their replaceable hydrogen engages with the bromine or iodine or chlorine (whichever it may be) that light has loosened from its combination with silver in the sensitive emulsion, converting it into the appropriate acid, and, incidentally, liberating black, molecular silver—the visible image. The hydrobromic, hydroiodic or hydrochloric acid is, of course, at once taken care of by the alkali present. When the reducing agent is a ferrous salt, the iron subsalt takes charge of the loosened haloid. Hydrogen does not appear to play a part in the metathesis. When zinc and hydrochloric acid are used, hydrogen again appears as the active agent.

The difference in the tone, shade or tint of the resulting visible image is due, probably, to a difference either in the size or in the shape of the molecule of reduced silver, for it is not likely that any part of the developing agent goes into combination with the silver.

Every photographer has a preference for some particular developing agent. One man must have pyro, pyro, nothing but pyro. Another one is sure that hydrochinone combined with metol gives him better results than any other. Another has formed a fondness for edinol, or for glycin, or for eikonogen, or for amidol, or for combinations of

one or more, or, now and then, for a combination of the whole shooting match—what the doctors call a shotgun mixture, or I would call “soup” or hash. There is no great practical difference between the various developing agents as developers, Tommy,—the greatest difference is to be found in the quality of the advertising that the makers or vendors of each put out.

In each of the coal-tar developers is a combination of carbon, hydrogen and oxygen, and, in one or two instances, nitrogen and sulphur. The activities of each of them are measured by the readiness with which its replaceable hydrogen combines with the light-loosened halogen element of the silver salt. Their desirability is measured by their greater or less tendency to injure the operator's hands or to stain the gelatine of the plate, or the fondness that one may have for the particular shade or tone of the negative that his pet developer produces.

Most elaborate advertising and plausible explanations will make a market for any substance whatever that will serve to “develop” a negative—a temporary market, at least—but it is individual taste that finally determines one as to the particular developer to which he will stick.

I do not remember, Tommy, just whom it was that you had made your patron saint, whether it was Saint Hydrochinon, or Saint Metol or Saint Hydro-Metol, or who it was, but it is a case of Microgen for mine. Microgen first, last and all the time.

Microgen gives me satisfaction every time that I use it, and as my temperament calls for satisfaction, I use it every time that I need a developer for any purpose whatever.

The tone of the negative image that Microgen gives comes between the blue black of amidol or metol-hydrochinone and the brownish tint of the pyro negative. It is a good black that has a slight suspicion of warmth to it—the black that makes effective printers. It works finely with the various developing papers, and it is neither sudden in its action like metol, nor languid like glycin.

By proper combination with alkalis there is no good reason why any of the known developing agents should not work well in a tank developing machine.

The special powders prepared by the East-

man Company are excellent, and so are those that Burke & James have placed on the market. There may be some other makes of tank developing powders that are all right, but I have not yet seen them. If, however, Tommy, you like to mix up your own developer, let me recommend to you the following as one that will do the trick:

Microgen 60 grains
Sodium bi-Sulphite..... 24 grains
Sodium Sulphite (Dry).. 60 grains
Sodium Carbonate (Dry) 80 grains
Water 40 ozs.

Potassium meta-bi-sulphite may be advantageously substituted for the bi-sulphite prescribed above.

Dissolve the Microgen and bi-sulphite in two ounces of the water, and the carbonate and neutral sulphite in four ounces of water. When dissolved pour the latter solution into the former and add the balance of the water.

You will find that the above makes an efficient developer for use with tank developing machines—in fact 'tis bully.

Yours very truly,

ALONZO.

✱

Condensed Moisture and Ruined Negatives

The excessive humid atmosphere we have had during the past few weeks has been a prolific source of stained negatives. Few amateurs, and not all professionals, take the trouble to varnish their negatives, with the result that they frequently become badly stained with silver during the printing. These stains, more often than not, are attributed to damp paper, whereas they are really due to damp negatives. Gelatine is a great absorber of moisture, and if unvarnished negatives are left long exposed to such a damp atmosphere as we have had lately the film will absorb a good deal of it, with the result that when quite dry paper that contains free nitrate of silver is printed on them the negatives become stained. The stains may not make their appearance at once, but they may do so at a future time, perhaps weeks or months afterwards. During the winter months printing is usually carried on out of doors. There the negatives and frames often become exceedingly cold, and when they are taken into a warm

room to change the paper, moisture at once condenses on them. This can be plainly seen on the glass side of the negative, but is not noticeable on the film side, though it is there all the same, and the gelatine, if unvarnished, absorbs much of it. Consequently, when many prints are made, with these conditions prevailing, the negatives become stained with silver. Usually when a negative becomes silver stained it is put down to contact with damp paper, while all the time the cause is dampness in the film. P. O. P. as sent out from the makers is always perfectly dry, and it must be very carelessly handled by the user if it becomes sufficiently damp to cause trouble. The remedy for, or rather the preventative of, silver-stained negatives is to varnish them. The cost of the varnish is a mere trifle, and the trouble of its application is next to nil.

—*The British Journal of Photography.*

Copying Discolored Engravings

The photographer is often called upon to copy engravings which have time stains upon them. Where the tint is uniformly distributed over the entire surface little difficulty is encountered if an orthochromatic plate is employed, but when the yellow stain of age is in blots and splashes it seems at times impossible to get rid of them without injury to the engraving itself.

Most chemicals capable of acting upon them are apt to destroy the fibre of the paper. We make use of a very effectual method which does no injury to the print, but rather improves it.

The stained engraving is immersed in a 10 per cent. solution of hydrogen peroxide, allowed to remain there for five or ten minutes, until the paper is thoroughly saturated, and then without washing, transferred to a rather strong solution of bicarbonate of potash. The unsightly spots rapidly disappear, and then the engraving is thoroughly washed in plain water.

Make Your Own Developer

How very convenient are those little tubes sealed at both ends, labeled with the simple instructions, "cut off both ends and dissolve contents in so and so many ounces of water;" but convenience or, in other words, laziness, is a dangerous coast in photographic sailing. Ready-made developers may be a boon to the ignorant or unskilled worker, but any photographer who has a feeling for judicious development will take no part or lot in them, but will rather consider what constitution of developer is best adapted to the condition under which the exposure has been made, with special reference to the character of the subject to be developed. Suppose the exposure should be a subject having a range in gradations of drapery from pure white chiffon or muslin to dark velvet.

Let us make up a developer constituted of a certain relation of alkali to reducing agent, at a certain temperature, diluted with a certain quantity of water, and we will suppose under such conditions that the resulting negative will come up somewhat rapidly and acquire full strength and detail in shadows. In other words, possessed of good contrasts without being harsh, but requiring considerable over-printing to bring out the finer detail in the white drapery or the finer half-tones of the flesh—a negative which gives brilliant prints.

Now let us dilute the same developer with double the amount of water, other conditions remaining the same; such a method will cause the image to be evolved much slower, yet there will be noticed a greater range of tone; instead of a few simple half-tones, lights and shadows there will be more intermediate tones, and on the whole a richer negative in every way, and a richness which is not lost by allowing the negative to gain strength in the developer.

Now let us take the plate under the same conditions of exposure, etc., and cut down one-half the alkali, leaving the amount of water the same as in the last case. The development will be slower, the evolution of the black velvet will be retarded and the deep shadows on the muslin drapery will be restrained, and altogether we will have a negative possessed of much more contrast between black and white and much more

pronounced than that produced by any of the other methods; but why go further—in a word, adjust your developer to exposure. It is the height of foolishness to adopt on recommendation a certain constituted developer and make it applicable to all conditions.

✽

Washing Between Development and Fixing

Since the introduction of the new reducing agents a mere rinse is generally given to the negative before placing it in the fixing bath. Pyro, as we know, demanded some little washing to prevent the liability to formation of a yellow stain in the hypo solution.

We have recently received a number of inquiries as to the nature of particular area or spots upon the negatives, of a perfectly regular shape, caused apparently by the formation on the surface of the film during fixing of minute air bubbles, which resisted the solvent action of the hypo and so caused opaque splotches of undissolved silver bromide where they prevailed. These unaffected areas, as will be readily surmised, are acted on by the light when the negative is removed from the bath. The question which suggests itself, is the unpleasant phenomenon to be attributed to the hypo bath; that is, to impurities therein, or to the film itself. Of course, we are not considering air bubbles caused by careless manipulation in development; these would easily account for opaque spots after fixing. We practically are at a loss to account for the phenomenon, but are inclined to trace it to imperfect washing after development. There may be conditions of variation in homogeneity of the films, which retain more of the developing solution than others, and so of necessity requiring a more thorough washing to effect elimination. That there is variation in the thickness of films every one is aware who waits for a tardy spot to fix out in the hypo. Frequently spaces will continue opaque long after the rest of the film is perfectly clear. Whatever the cause chemically or physically, the defect is preventable. A plate that has been well washed after development, before fixing, in our experience has never presented the spots.

Limits in Enlargements

There are pretty definite limits to the size to which a picture may be enlarged, and it is well, if we have any sense of the eternal fitness of things, to be attentive to the limitations. Even a very slight blurring in the original is unpleasantly perceptible in an enlargement, and the disagreeable feature is only emphasized with increase of dimensions. Negatives with intensely sharp outlines, it is true, may be enlarged considerably, but absolute sharpness is an impossibility even with the best lenses.

On the other hand we must also take into consideration the somewhat coarse grain of the gelatine bromide film. A ten-fold amplification makes this granularity quite perceptible, so that it is well to confine our enlargements to four or perhaps six-fold. The coarsest grain is presented by the most rapid plates. An extensive enlargement on a rapid plate looks quite dull and motly. A slow bromide of silver collodion emulsion is finer in grain and, and when chloride of silver is employed instead of bromide, the grain is still finer. Carbon tissue is particularly delicate, especially if properly treated. Albumen also gives a somewhat structureless grain.

Carbon, or the old Taupnot process, would seem to be the most desirable, but the latter can hardly be employed unless we use a very powerful source of illumination. There is prevalent objection to anything for enlargements which necessitates prolonged exposure, and recourse is had to comparatively rapid tissue, but we here repeat our caution not to carry the amplification to a degree which destroys all gradations.



Artificial Light vs. Daylight

The new illuminators for studio work are hardly appreciated by those in search of the picturesque in portraiture. Professionals seem to be waiting for the amateurs to force upon their consideration the great value of the mercurial and jupiter lights as convenient, easily managed, powerful and therefore, rapid sources of illumination available at all times and in all seasons and withal capable of the most artistic application.

There is not very great variety after all in the character of the ordinary daylight

illumination employed by portraitists in their daily routine. One would imagine that the stereotyped methods were the only ones. One professional shows his superiority over another more by the character of his pose and composition than by any novelty in illumination.

The exigencies of studio illumination are responsible, in a measure, for this monotony. Let a certain style of illumination become popular from the fact that some one has achieved honor thereby, and the self-same method is indiscriminately applied to every character of face, without remorse of conscience, that it is unsuited thereto.

Fortunately for the photographer the public is long-suffering, though anxious for something new, and accepts the excuse that there are limitations to his art; well, granting these limitations there is no reason why he should not get out of his rut when an opportunity is afforded him of presenting something novel, strange and beautiful.

Compliance with new conditions means trouble and expense and without any assurance of compensation in money receipts he turns his back on any suggestion for change. With daylight illumination changes must be made in studio for each individual fancy, curtains must be shifted, the light cut off or emphasized in certain directions to obtain desired artistic effects; often the amount of light must needs be greatly diminished, the exposure prolonged, the sitter wearied and after all only an approximation obtained of what is in his mind's eye.

Can one blame the professional for looking askance and doubtingly on novelties? No; but one may, perhaps, justly blame him for not perceiving the great value of the new factors he has within his reach. We are glad to say that there is one professional photographer in Philadelphia who appreciates the potent agent for artistic results in the new invention called the jupiter light. We refer to Mr. Elias Goldensky. Possessed of keen perception for art he finds in this device an almost exhaustless means for carrying into effect his æsthetic perceptions.

With this apparatus he has produced some exceedingly beautiful methods of illuminations which are impossible with the character of present studio exposures.

Values in a Picture

We are all aware how strikingly a single figure, if well painted, with the simplest kind of background, will stand out from the other pictures in an exhibition. The most elaborate work seems weak and ineffective beside it. And why is this? One word gives the key—simplicity. If distracting elements are introduced, making lights and shades of equal value, the lights and darks must not compete with each other.

There ought always to be in a good photograph a point of highest light and a spot of dark with the intermediate gradations.

Here is hardly the proper place to descant on artistic values, but we cannot forbear to say a word, since the whole effect of light and shade in a picture—that is the standing out of one part from another—is dependent upon the proper perception of the relation of one tone with another. If all objects were either white or black this sense of judgment of tone would be comparatively easy of cultivation, but the great variety in shades of color in objects and the effects produced by reflection demand a close and accurate study of things in relation to one another, in order to appreciate the harmony of light and shade. Not all of nature's accidental combinations are equally

beautiful. Some delight us more than others, while some seem even to be discordant, yet never does nature offend our sense of the beautiful by such discords as we see in ill-conceived paintings or photographs. Really no object can stand isolated. We have our impression of things modified by surroundings, and it will be seen that any haphazard association will affect us unpleasantly if no due regard is had to modification by juxtaposition.

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Cold Weather Troubles

It is pretty obvious that access of cooler weather is bringing its usual train of attendant troubles, for we have had several complaints of stains on postcards, which in all cases have been due to improper fixation. It should not be forgotten that all photographic chemicals act somewhat slower in cold weather, and that, therefore, particularly in the case of the fixing bath, warm water should be used for preparing the same, and a little longer time allowed for fixation. In the case of cold developers, the action is not only slower but also less energetic, so that a cold developer may frequently be the cause of apparent under-exposure and hardness; it is as well, therefore, to pay attention to this matter—*Bromide Monthly*.

HE GOT IT



(1) *Shutters*—"I'm going to try to get some good action pictures."

(2) "Now, skip a little there, can't you? Skip!

(3) "Hi! Where you going? Come back here! Hi!"

(4) *Mrs. Shutters*—"My! What action! Splendid! Keep it up, Henry!"

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The New York Studio Outfit

A page from a Catalogue
which every photographer should have.

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Platinum or Carbon

By A. J. Jarman



As a printing process for the production of permanent pictures by photography, the choice must be made between platinum and carbon. It is not intended here to refer to prints made by the half-tone and collogotype processes, or by that wonderful process, the "Woodburytype," because none of this class of prints is made by the direct agency of light.

The intention is to treat only the two processes where the picture is produced by the action of light alone.

The platinum process has been in existence for many years as a thoroughly practical one, commencing with the hot bath process, which consisted of a solution of potassium oxalate of 130 grains of the salt to one ounce of water heated to a temperature of 180 to 200 Fahr., the exposed paper being *floated* upon the surface of this hot liquid, not dipped into it as is the case with the modern cold development, the richness of the deposited platinum being of a fine, velvety black, very different to the color of the cold developed print. Owing to the well-known indestructibility of platinum, it had been long desired to produce prints by the agency of light with this metal. As far back as 1840, the chloroplatinite of potassium was used by Doebereiner, a Frenchman, in his experiments with a view to securing an image in platinum by the direct action of light upon paper coated with a solution of this salt. Very near was Doebereiner in his research, using the same salt of platinum that is used to-day in the manufacture of platinum paper. The use of the salts of iron in combination with platinum had not been discovered at this early date, and particularly the reduction of the metal by means of a free oxalate. This combination was the discovery of Mr. Willis, and at once made the platinum process a practical one. There cannot be any question as to the permanency of the metal platinum in such a finely deposited state as platinum black; the point for consideration is, has the paper itself become affected by the action of the acid

clearing solution. If complete and thorough washing has not been attended to, then there will be sure to be some injury to the fibre of the paper, and sooner or later disintegration takes place. The writer has some platinum prints made by the hot bath process of development in 1880. The whites have become very much changed, but the paper, which was that known as Saxe, does not seem to have lost its pliability. A point for consideration in connection with platinum is its rapid increase in price.

Twelve years ago the metal platinum could be bought for eleven dollars per ounce; to-day it is *twenty-eight* dollars per ounce, and the price will, without doubt, go to fifty dollars per ounce. The cause of this is the scarcity of the metal, the continually increasing demand for platinum for the leading in wires of the modern incandescent electric lamp, this being the only metal that has practically the same co-efficient of expansion as glass, hence its important quality of being fixed to the glass bulb; more than this, platinum is required for the manufacture of retorts for distilling sulphuric acid. This is of national importance, and may be the cause, eventually, if platinum goes extremely high in price, of its being prohibited for photographic use. One thing appears to be certain, the price of platinum paper must go higher and higher until the price for photographs may be so high that the demand for them will be correspondingly less.

Many very fine prints in platinum have, within a very short time, become yellow in what should represent the whites of the picture. This defect is generally considered to be due to a trace of the iron salt remaining in the body of the paper and becoming oxidized by contact with the atmosphere. It may be due to other causes, especially if the sensitizing solution contained any of the salts of lead. In either case it proves imperfect fixation or clearing of the print. It should always be borne in mind that the thicker the paper the longer the paper must remain in the acid clearing solution to admit of complete permeation, and consequently the complete dissolving of the iron salt.

The finest prints in platinum are produced from negatives that have some body to them—not a phantom image, where the shadows consist of clear glass, absolutely without detail. Such negatives give invariably bronzed shadows or a mass of black without any relief. Sepia platinum prints have often been questioned as to their permanency because a salt of mercury has been employed to bring about the change in color of the deposited platinum. The true cause of this change in color has not been satisfactorily explained. A few years ago it was the writer's business to manufacture platinum paper, both black and sepia. By carefully reasoning as to the cause of change of color, it appeared to be due to the rapid rate of deposition of the metal platinum, the presence of a mercury salt causing this, because it aids the reduction of the platinum; in just a similar manner, silver can be deposited in an electro-plating bath of the color of coffee-grounds. This change in color is brought about by increasing the electro-motive force of the depositing current, thus increasing the rate of deposition. The change of color of platinum seems to be due to a similar cause.



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Respecting the permanency of sepia platinum prints, this will depend upon the component parts of the image. In some sepia platinum papers there have been used the salts of uranium as well as mercury. Prints made upon such paper have withstood the test of twelve years without the slightest change; in fact, there appears to be less change in the color of the paper of a platinum print in sepia than in the black. That the component parts of a sepia platinum image differ from the black can be readily tested by placing a sepia platinum print into the following mixture:

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|---------------------------|------------|
| Distilled water | 10 ounces. |
| Iodide of potassium | 60 grains. |
| Iodine | 60 grains. |

When dissolved, add cyanide of potassium, 90 per cent. $\frac{1}{2}$ ounce. Shake the mixture until the cyanide of potassium has dissolved, when it will be found that all the color of the iodine has disappeared. Pour this mixture into a clean tray and insert a dry sepia platinum print; rock the tray a few times; almost instantly the whites will brighten up, when in the course of two or three minutes the image will begin to disappear. If a platinum print in black is treated in the same mixture, no such effect is observable. Of course, this is a very unusual test, but it will prove that a sepia platinum image is capable of change, and considerable change, too, until it has become nearly obliterated. The test seems to show that the metal or metals composing the image are converted into an iodide which in turn is dissolved by the potassium cyanide.

In the event of platinum paper rising to a price that will preclude its use by many photographers, the only other rival for permanency is carbon. It will be in an instance like this that the carbon process will come to the fore. It is not generally known how well a platinum print can be preserved and a little brilliancy added to it by being dipped into a suitable varnish or lacquer, and that it becomes washable upon the surface. This is accomplished in the following manner: Make up a mixture of

| | |
|------------------------------|-------------|
| Amyl acetate | 10 ounces. |
| pyroxiline (gun cotton)..... | 400 grains. |

Shake the mixture well, then filter it through a tuft of washed-out cheese cloth, after it has dried. Absorbent cotton cannot be used in the neck of an ordinary glass funnel because it becomes clogged quickly. When filtered, dip the print into it, drain well by suspending the print by one corner over a funnel, as the drippings can be used over and over again. When the print dries down it will present a slight brilliancy all over, and a trace of detail in the shadows will be seen which before was not apparent. If the print has been already mounted upon cardboard, it can be coated with this collodion by pouring a pool upon the center and allowing it to flow to each corner, then drained from one corner to the wide-mouth bottle from which it was poured. Prints treated in this way are well preserved from the action of any fumes upon the surface. If coated twice, a surface is produced very much like Aristo Platino. To some photographers this will prove very acceptable. This varnish or lacquer is known as Amyl Acetate Collodion. It must be made with the *concentrated* amyl acetate, and if too thick when prepared, it can be thinned down with

the amyl acetate. Various names have been given to it, such as Alba Varnish, Albaline, Crystalline and Banana Oil. It is really nothing more than Amyl Acetate Collodion.

Carbon prints can also be coated in the same way. It forms a good surface protection. The carbon process is one that is well known to be permanent. The idea of making prints in carbon originated from seeing some of the drawings of ancient Egypt, made in charcoal. These drawings have withstood the test of time for over 3,000 years. Mungo Poretore's discovery of the action of the bichromates upon colloid bodies, such as gelatine and glue, made it possible to produce pictures in carbon by mixing finely-ground charcoal with bichromated gelatine, then exposing it to light, then washing out all the material that had not been acted upon by the light's action. Carbon being the first material employed in this manner gave the name of the carbon process.

To-day various colors are used under the same name. To produce small prints rapidly, the platinum process has the advantage, although upon a large scale small carbon prints can be produced quickly in large numbers. The permanency of prints by the carbon process is undoubted. There are many carbon prints in existence to-day, ranging from 43 to 45 years old, in an excellent state of preservation. Prints made in carbon render all the good qualities possessed by the negative in just the same way as albumen paper; more than this, any kind of surface can be obtained by the carbon process, either matt, semi-matt, or a surface with a very high gloss, the latter being accomplished by developing the print upon glass plates with collodionized surfaces. Further still, the process lends itself to the production of prints upon ivory, porcelain and celluloid; in fact, upon anything whatsoever desired. It is capable of being employed by direct development upon almost any surface or by transfer. These advantages are not enjoyed by platinum. When it is desired to make prints in sizes ranging from $6\frac{1}{2} \times 8\frac{1}{2}$ to 25×30 , carbon is capable of yielding results that cannot be surpassed by any other process. Such prints may be made upon the roughest papers, upon celluloid or upon porcelain, or, which is more often the case, upon thick sheets of opal glass. Only too often has it been remarked that the working of carbon is difficult and tedious. This may be the case with those who have never had sufficient experience in the matter, but to a good, practical hand, these apparent difficulties do not present themselves. That the amount of labor in producing carbon prints is greater than with platinum is true, but the cost of material is much less. It has very often been urged that the action of the bichromate solution upon the hands and arms is one cause of non-adoption of the process. There need be no fear of serious consequences in this direction if only ordinary care be taken. If a little white wax or paraffine, dissolved in sulphuric ether or benzole, is well rubbed into the hands, especially under the nails of the fingers and around the quick at the back of the nails, and a pair of India rubber gloves used, no trouble need be found. Some operators are more susceptible to the action of the bichromates than others. In working the platinum process there are many printers who are very seriously affected by the particles of dust from the cutting and use of the paper. Many of them to-day

are suffering from the effects of its use, some being compelled to give up their employment. There are as many defects in the use of platinum as there is in carbon; all that is necessary is to take care and use ordinary precaution. Many persons have used both platinum and carbon for years, and are not affected by either. These objections should not deter any one from taking up the carbon process and adopting it in his business.

There are other points in the use of the carbon printing process; any part of the print can be lightened up at will during the process of development and the hidden detail brought out by merely forcing that part with extra warm water. It has been often urged that if a carbon print is overdone (overprinted) that it cannot be reduced. This is a fallacy. If a solution is made up of a few ounces of chloride of lime, in a pint and a half of water, shaken well and allowed to stand to become clear, an ounce of this decanted, clear liquid mixed with a pint of water and flowed over the print after it has been previously wetted, it will be found that a carbon print can easily be reduced; the print being then well washed, treated in a weak alum solution, washed again and dried well, completes the operation. It has also been urged that a carbon print is liable to fade because the whites of some such prints have changed color considerably. This is due to the fact that the bichromate salt has not been thoroughly gotten rid of by mere washing; it shows that the alum bath has been improperly used. If a carbon print has been transferred to its final support, it should, after drying down, be allowed to soak in a three per cent. solution of common alum for five minutes. This will remove the last trace of any bichromate salt; the print being then well washed is ready for mounting. Any carbon print treated this way will not change color in the whites; prints treated thus are as bright to-day as when made twelve years ago.

In adopting the carbon process for commercial purposes, a room should be set apart to carry on the work, in which no other kind of process should be worked. Plenty of sink room is required and good ventilation. With a room fitted up to carry on the work of carbon printing, with every convenience, there is no more trouble in producing good carbon prints rapidly than with any other photographic printing process.

Very often an attempt to work this process has been resorted to quite on the makeshift plan. This has been the cause of many failures. To carry out this class of work well and with rapidity and excellence, a workroom must be suitably fitted up. This will be the means of successful working. All that is necessary is to introduce this class of work to the public at a price that will repay the photographer, when it will make its way as well as any other process.

The carbon process is not an imitation; it is the real thing, and from a commercial standpoint is capable of being as remunerative as any other process, and much more so for large work. It is well known that coloring can be carried out upon a carbon print in a most effective manner, the base of the coloring being as permanent as it is possible to make a photographic print. Considering that the price of carbon tissue is not likely to go up like platinum paper, the process stands a good chance to become adopted more and more by the photographer, either the amateur or professional.

Artificial Light vs. Daylight

By Felix Raymer

WELL, the time has come when the question is being asked "Do you think artificial light is better than sunlight or daylight?" A few years ago we should have laughed at this question and treated it as nothing more than a joke, but to-day it is no joking matter, and in my humble opinion within five years there will be more artificial lights used than the oldtime skylights. It is surprising how anxious the photographers are to become independent of "old Sol." The operator swears at him when the day is dark, the printer joins in the chorus, and the "boss" stands off and applauds them both, for he knows he is losing trade by the bad weather. When the public realizes the fact that the operator is able to make as good work on the cloudy day as on the clear, it will begin to come into the studio on those days, and there will be no dull days and no unprofitable ones; all will be the same. Notwithstanding the fact that photographers have advertised that "cloudy weather is as good as sunshine," if they will but be perfectly honest for a moment, they will have to come right down to brass tacks and acknowledge that cloudy weather is *not* as good as clear and that the work done on those days is not so good. We have tried to convince ourselves that it is as good, for many years, but have never been fully convinced, and neither has the dear public.

But now come the artificial lights, and all we have to do is to press a button or turn a crank and on comes the light; then we go ahead, and the negatives come the same one day as another. Now comes the question that I expect to answer, "Do you think artificial light *better* than daylight?" And to this question I answer: "Nay, nay; but I do think it more uniform than daylight, and I do think it as good as daylight, but not *better*." This brings me back to the old assertion that I have made so many times through the columns of *THE CAMERA*, "that one light is as good as another if the operator is as good as the other." It's all in the man, and if the man can work one light he can work any other light; but if he falls down on one light he is as apt to fall down on some other light. If he can control one light and make it give him a certain effect, he can control another light and get the same effect. If he comes up under a certain light and says, "I cannot get that effect under this light," or "I cannot get that effect here," he is lacking just that much of being a good operator. If he comes up "bright and smiling" under any light and gets the same effects every time, it may be taken for granted that he is a man who knows what good work is and how to get it, and if he cannot have a pet light he will make one that is not a pet do the work for him.

So it is in the use of artificial light. The operator who can work any skylight will have no trouble in working any artificial light that is on the market at the present time for that purpose. I make special mention here of the Aristo light, simply for the sake of convenience and for the reason that I have worked that light and know what it will do; but at the same time I desire to say I think there are other lights that will produce as good work and that are just as easily con-

trolled. The use I have made of this light has convinced me that I can get anything with it that I can get with daylight. The one question that seems to be in the minds of all operators is that it may not work as rapidly as daylight, which would, of course, necessitate a longer exposure, and hence be not so good for work with children or short exposures generally. This is not my experience, for I have found that the exposure can be made quicker than with the average skylight. The exposure by this light can be governed largely by placing the subject farther from or closer to it. Often in the working of a skylight we find the operator stopping his lens down to control the exposure; he knows the plate will be overexposed if the lens is used open, and not having his light curtailed, so that he can close off part of it, he must control the exposure by stopping down the lens. This destroys one of the most pleasing effects in portrait work. When the lens is stopped down to any great extent it destroys that warm, fluffy, atmospheric effect that all good operators like to have their work show. This atmosphere makes the portrait look as if there are certain parts that are nearer than other parts, and so we get the right idea of distance and perspective. This is all destroyed when we begin to stop the lens down, for to stop it down makes the lens cut deeper, and in doing that it brings all parts up on the same

plane, making what we call a "flat field." This is anything but desirable in portrait work. It is often impossible to move the subject away from a skylight owing to the fact that the room is so narrow that we have to confine ourselves to a limited space, hence the stopping down of the lens.

With the artificial light this is overcome, for the light can be raised or lowered and the subject moved away from it until the exposure is controlled, and at the same time we preserve the atmospheric effect that is so much desired. Any operator who understands the use of the flash machine will understand this condition and be in position to make the most of it. He will remember that the farther from the subject the flash machine is placed the softer the effect of the light and the *more powder* he must use. So it is with the artificial lamp; the farther from the subject it is placed the softer the effect and the longer the exposure that must be given. Therefore, it will be readily seen that the exposure problem is entirely in the hands of the operator, something that cannot be said of the oldtime skylight. There has never been an operator who had complete control over his light when it came to exposure. There are too many conditions governing the exposure problem for him to get complete control of it, and chief among the conditions is the constantly changing intensities of the light. One minute the sun is out strong, the next it has softened considerably, and the next it is cloudy; so on during all the day, so that the operator is never making the same exposure, and when he comes to developing he has to manipulate the developer for every batch of plates,—or at least he *thinks* he has to manipulate the developer. With the artificial light the intensity of the light is the same all the

time; and if the operator will experiment just a few minutes he will find the distance it should be placed from his subject to secure the same effects at all times and then keep the lamp there all the time, and he will have the exposure problem in his hands so far as the light is concerned. The distance the light should be from the subject will be governed by the lens to be used. Some lenses work at F. 4, and with a 16-inch focus will, of course, work very much faster than a lens working at F. 8 and 16-inch focus. So the operator should have the lamp placed where he can get the exposure he wants to give and there leave it. I have an F. 4 lens, and the lamp, when in use, is placed so that it is about 7 feet from the top of the subject's head, and the average exposure is about 1 second. This would be the average exposure under a skylight measuring 16 feet square, where there were no obstructions to the passage of the light to the subject; so it will be seen the lamp works as fast as any other light.

One other advantage I see in the lamp is that its light is a more concentrated light. I do not mean it is harsh, for it is anything but that; but being small, it concentrates the light at those parts at which we want it concentrated and then blends out in a soft effect to all the other parts. This is especially noticeable in the lighting of white draperies. I suppose by this time the readers of THE CAMERA have found that I am somewhat of a crank on the subject of lighting white draperies. Now, this light is fine for that part of the lighting. I have not found it necessary to use any of the screens that I used in the skylight lightings to control the light on the lower parts of the figure. The light concentrates at the face, and that is the highest point of illumination, and from there it is a gradual reduction to the lower parts of the figure. This is as it should be, for all operators know their great trouble in lighting white draperies has been to keep the white dress from coming up so fast in the developer that it would give nothing but a white (blank) effect in the finished picture. There have been many methods resorted to to overcome this effect. One was to place a screen between the subject and the light, so that all of the direct light, striking the subject, would have to pass over the top of the screen and then blend downward in a soft, diffused way to the lower parts, and I have found very few operators who could do this with any degree of success. Another method was to locally reduce the white parts after development, and I have found fewer still who could do this. With the artificial light it is not necessary to do either. The subject should be placed so that the lamp is about 7 feet (more or less, according to the length of exposure the operator wants to give) from the top of the subject's head and raised to a point where it will throw the light on the face from an angle of about 45 degrees. This is another thing the readers have found that I am a crank on. I am most positively a crank on having the light fall on the subject's face from an angle of about 45 degrees, if the picture is to be a *portrait*. If it is a genre picture it may be different—but that's another story. The lamp should be placed to the front of the subject, so that if he were to close the eye on the light side of his face and try to see the lamp with the eye on the shadow side of his face he could see the entire lamp. If the operator has any doubts of the position his subject should occupy in relation to the lamp, let him take the seat to be

occupied by the subject and experiment until he gets the lamp in the right position. When he can see the lamp with the eye that is on the shadow side of the face he has it placed at the right point in front of the subject. Next he should raise the lamp as high above his head at this point as he can without losing sight of it with the shadow eye. This will place the lamp at the right height to secure the angle of 45 degrees. Now, if he has the subject seated at this point he will get what is known as the portrait effect of light, or broad effect some call it. From this time on he can move his camera from one side of the subject to the other and get anything from a broad effect to a full profile Rembrandt effect, as it is called. Now, for the exposure all he has to do is to remember the exposure for a broad effect, and it will be the same on all occasions. Then remember the exposure on the Rembrandt effects and they will always be the same. So he has the exposure problem in his hands. Now, if the temperature of his developer and its strength is the same, he will have no trouble in following the "tank development" system and developing all of his plates in one solution and at one time. The artificial light is destined to simplify the work of the photographer, making it possible for him to make his negatives by it, retouch them by it, and at last to print them by the same light and be able to do the printing at any "old time." It not only makes it possible for him to do these things, but he can so plan his exposure and his developer according to the exposure that he can place fifty negatives into the same solution and leave them for a given time, and when he looks at one, and that one is finished, he can, without taking the trouble to look at the balance, take all out, for they all, having received the same exposure and having the same developer and the same temperature, *must develop the same*. "Is artificial light better than daylight?" Well, no, not so far as effects in light are concerned, but for the many things it will do and the convenience of it, YES, in great big capitals. The effects to be secured are as good and the conveniences greater; therefore, it must be better in many respects. For groups I have found it just as good by using a soft white screen between the light and the group. The light is screened on all subjects, but in groups it must be reduced more. This does not make it any slower than the skylight; therefore, that is not an objection.



Pictorial Composition for Beginners in Photography

By J. W. Ridpath



PICTORIAL photography is a very broad subject. It deals with selection of subject, grouping, composition, light and shadow, focusing, making of negative and after-treatment of the same, printing and mounting, each being a separate step toward the finished picture. For the present purpose it is intended to speak briefly upon only one branch of the subject.

Pictorial composition is based upon certain well-established and generally accepted rules or general principles, which, although somewhat elastic, are found to be generally observed by artists everywhere. Some say art is subject to no

set rules, for its variations are infinite, yet nearly all agree that it has certain general principles. In fact, almost all pleasing pictures, whether paintings, drawings, etchings, photographs or made by any other process, are found to be based upon some of these rules.

In a short article like this, it is only possible to refer briefly to a few of the more important or fundamental rules of composition, omitting such subjects as lighting, atmosphere, balance, etc. A careful observance of the following nine rules will greatly aid the young photographer in making more pleasing and consequently better pictures:

1. In selecting a subject to photograph there is always a principal object—that which you want a picture of. It should, if possible, be placed to one side of the centre and below or above the middle line. In other words, place the principal object in one of the natural quarters of the picture space. The principal object should, if possible, be supplemented by one of lesser importance as a secondary object. If the view contains trees, a position may be selected where a handsome or picturesque tree will occupy a point near the camera, in or near the foreground, as the principal object. This might be supplemented by a small tree of somewhat similar shape in the middle distance. A group of men or women might be supplemented by a group of children placed at a little distance. A church or other important building, in perspective, might be supplemented by a smaller building in another part of the picture.

2. Objects should be few in number and simple in character. A group of two or three trees looks much better than one showing an extensive and elaborate collection of shrubbery. The latter may look beautiful to the eye, but the former will yield a more pleasing picture. One shock of corn, well to the front, with a few others less distinctly shown in the distance, is much better than a number of shocks, equally spaced, at nearly the same distance from the camera. Two or three figures may be satisfactorily grouped, but to make a picturesque group of a dozen will require artistic skill of a high order.

3. In order that your picture may look natural, the surroundings should always be in keeping with the principal object. To illustrate: A lumberman's or huntsman's camp may look well in the forest. A fisherman's boat and nets should be beside water. A wagon loaded with logs might appropriately be coming out of the woods. A farm team should be engaged at some regular farm work, with appropriate surroundings, such as plowing, hauling grain, raking hay or any other usual farming operation. A quaint stone arch or rustic bridge may impress you favorably; if so, you will find that a willow tree, group of shrubbery, or even a bunch of tall weeds, if near the camera, will add greatly to the picturesque effect.

4. The principal forms of composition are three in number. The angular form may be illustrated by drawing an imaginary line diagonally from an upper to a lower opposite corner, thus dividing the picture space into two triangles. The principal object may be advantageously placed in the lower triangle; the secondary object may be placed in the lower half of the upper triangle as middle distance, while the upper half of the upper triangle is occupied by the sky or

other background. Sometimes a very handsome angular grouping is effected by placing the principal object in the upper triangle of the picture space with the secondary object in the lower triangle.

5. The pyramidal form of grouping is particularly good for strong objects; being shaped like a mountain it gives an idea of stability. The tall tree, church-tower, a house in perspective or tallest man in a group, occupying a somewhat central and commanding position a little to the right or left of the centre of the picture space, might form the basis of a good, strong composition.

6. The circular or oval forms are light and graceful and lend themselves naturally to groups of shrubbery or flowers, and still-like objects, curved or radiating forms, are quite plentiful in nature. The dependant branches of the elm and willow, the oval form of the violin, many articles of glass and porcelain, the spray from a fountain, a vase filled with flowers, the oval form of the human face, and, indeed, the long oval of the human frame, are illustrations of this graceful form of composition.

You do not always find objects that compose readily; perhaps the fault is in the objects themselves; perhaps it is the wrong time of day, or time of year; conditions are not always alike. Change your position slightly and look again. If the image on the ground glass is not pleasing, why expose a plate?

7. It is important that the principal lines of the picture be so placed as to enhance its beauty, otherwise they may detract from it. Generally the horizon or sky-line in out-door pictures should be placed about one-third distance from the top or the bottom, not halfway up. In many cases the sky-line is quite important. A gently undulating background, with hazy distance, being suitable for peaceful farm scenes. Rugged mountain scenery might appropriately have a saw-tooth or jagged sky-line.

8. All important lines, such as fences, roads, streams, etc., should lead into, not out of, a picture. They should be so placed as to lead the eye unconsciously toward some point of general interest. For the above reason a cross-roads picture is seldom pleasing. If the important lines conform to Hogarth's line of beauty, a graceful double curve, they will greatly enhance the beauty of your picture.

9. Figures, if included in a landscape or other view, should always be appropriate in character and in keeping with the surroundings. A farmer at work in the fields, dressed in his working clothes, is more picturesque than the same man in his best bib and tucker entertaining company on the front porch. A hod-carrier would look better with a pipe in his mouth than smoking a cigarette. Two girls in sunbonnets, picking blackberries, might add life to the scene; but two young ladies, dressed in silk and lace, wearing ostrich plumes in their hats, would be out of place among blackberry briars. Perhaps there is no more certain way to spoil an otherwise good picture than to pose your cousin or best girl in the picture centre, with nothing to do but stare at the camera. If you must place her in the range of the lens give her some appropriate employment, such as picking daisies, golden rod or other wild flowers, but if you value her friend-

ship, don't have her looking at the camera. To do so will probably spoil the composition, and the portrait is almost sure to be disappointing.

Some persons may object that these rules, or general principles, are not practical; that many views cannot be artistically grouped. It is certainly true that many views are quite commonplace, having nothing picturesque in them. In an afternoon's outing the camerist may pass a hundred views, many of which have some attractiveness; but only one or two appeal to him. While you cannot move the wayside cottage or trees you can move the camera. Select the most important object and give it a strong place in the picture space, a little out of the centre. Select a few objects, not too many, as accessories; most views contain too much. Try to find a suitable foreground. Move a little nearer or farther away, to the right or left; raise or lower your camera. While the principal object should occupy a strong place, the view should be considered as a whole, unity or oneness being all important. Examine the image on the ground glass and select the best viewpoint. If you spend a little time intelligently studying the scene, the chances are that you will secure a much better picture than you could by a "hit or miss" method. Remember that one good picture is worth more than ten poor ones.—*Journal of the Franklin Institute.*

MAY-TIME

C. W. CHRISTIANSEN

Honorable Mention

THE CAMERA Competition, No. 100

How to Use Diaphragms and What to Use Them For

By C. H. Claudy

PROBABLY nothing, except exposure, confuses a beginner more than the multiplicity of stops provided on his lens, and the praiseworthy desire to learn all at once what they are all for and how to use them. As a matter of fact, there are a whole raft of photographers, who are not beginners by any means, to whom a right understanding of the stops and their uses is denied from lack of study, they being satisfied that the whole sum and substance of the thing is contained in the word definition.

Now, all the various stops on a lens mount or shutter are there for a purpose, and for that particular purpose no other stop will do as well. I should, strictly speaking, say purposes, for stops are used in several very different ways, all important and all attaining their several objects by the same means, which makes the thing, possibly, a little more confusing than it would ordinarily be.

With no regard whatever to the relative importance of the purposes of stops their principal functions might be catalogued as follows:

1. To secure increased definition.
2. To correct functional errors in the lens.
3. To add or subtract from the number of planes in the picture.
4. To provide for aerial perspective in the proportions desired in landscape photography.
5. To increase or decrease depth of focus.
6. To control timing.
7. To correct errors in perspective due to diameter of lens. (Rare.)
8. To make slight changes in size of picture from a given point. (Rare.)
9. To increase covering power of a lens (similar to number 2).

These are, perhaps, the main uses and the most important ones of stops or diaphragms, and the novice will see at once, from the list, that there is more to the subject of stops than a single chapter.

Taking these up in their order, a stop is used to secure increased definition when the larger stop leaves part of the picture hazy; that is, if you have focused on an object twenty feet away from you, using a lens of seven inches or more focus, and the largest stop, you will observe that the background is not sharp and distinct. To get it sharp and distinct you use a smaller stop, which by cutting down the area of the cone of light formed by the lens increases the definition. The cones of light formed by the lens from the objects in the background come to a focus *before* they reach the plate in the case under discussion, and, continuing, form an inverted cone. If the angle of this cone is large, as with a wide open lens, the plate, in cutting across it, receives an image which is a *circle*, not a point. If the area of the cone is reduced, and the angle thus made smaller, the image, while still a circle, is composed of a circle so small that *to the eye* it is a point and the background is sharp.

To correct functional errors in the lens is my number two. All lenses, not anastigmats, have certain optical errors. These errors make their appearance



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in making pictures with the lens wide open. The normal rapid rectilinear lens, for instance, at stop F. 8. or U. S. 4, does not and cannot cover the plate it is listed for sharp to the edges. The corners will be diffused, to some extent, when the centre is sharp, or if the focusing be done at the corners, the centre will not be sharp. This aberration is called curvature of the field. Stopping down the lens corrects this by the method just described under number one. There are other aberrations and distortions, notably astigmatism, the inability of the lens to focus horizontal and perpendicular lines at the same time, which can be partially cured by stopping down. Under this head could properly be classified errors in focusing, and focusing errors due to the chemical and visual focus not being identical. Almost all the rapid rectilinear lenses of average focal length, such as are fitted to cameras up to and including five by seven, will work properly as far as spherical aberration is concerned if stopped to sixteen F or U. S. (Same thing.)

From the pictorial standpoint, the most important use of the stops is found in my number three, to add or subtract from the number of planes in the picture. If a lens is focused on an object as close to the camera as the bellows extension will allow, there will be, practically, but one plane in the picture with the largest stop. That plane will be the one which passes through the object focused upon. If, now, the opening in the lens is reduced, another plane, behind the first one, will make its appearance; in other words, some object, slightly behind the first, in the first instance out of focus, will come into focus. Reason, same as in number one—narrowing of the cone of light. Still further reducing the aperture brings still another plane into focus, and so on until, when an aperture of pin hole size is reached, the whole infinite distance will be in some sort of focus.

The practical application of this comes in taking pictures in which some object in the foreground is desired to stand out (or in, as you choose to call it), giving a seemingly perspective or stereoscopic appearance to the view. A great fault in many otherwise good pictures of landscapes, particularly those which contain a figure or figures in the foreground, is the pasted-on appearance which the figures possess, they seeming to be an integral part of the background, and not showing any plane behind them except the background. Such pictures are made with a small stop, focusing having first been done on the figure and the stopping down bringing the background into a wire-sharp focus. The proper way to take such a picture is, of course, to either use a large enough stop to soften the background (I don't mean to make it fuzzy, but to differentiate, in degree of sharpness, between figures and landscape behind it), or, if a small stop must be used, to alter the focus, after the stop is in place, by racking *out* the bellows, enough to soften the background, while leaving the figure sharp.

A familiar example of the pasted-on effect is found in current pictures of flowers and plant life, growing wild, and in pictures of birds, animals, fishes, snakes, etc., usually taken with a lens of short focus, so that depth is obtained when it isn't wanted. Often it is hard, in pictures of this character, to see at first just what is intended to be pictured, the mass of intricate background

swallowing up, to the eye, the object, which is made to do what little standing out it does solely by its shape, and not from a variation in plane, and not, of course, as in a colored view, by its tones.

Number four, aerial perspective, is bound up with number three. Aerial perspective may be roughly defined as the production of a sufficient number of planes in the picture to give a perspective effect without reference to line. It could, therefore, in this story, be confined to number three were it not for one little trick which has been spoken of before. It sometimes happens that we wish a sharper picture than we could obtain with a wide open lens and yet wish to retain aerial perspective due to having planes different by differences in sharpness. In this case, take part of the picture stopped down, and the other half of it with lens wide open, splitting the time for each half of the picture, and reducing that portion applied with the wide open lens in the proportion marked by the relative value of the stops. This is an effective trick in interior work, and one first suggested to the writer by your Editor, many years ago.

Now, leaving out all considerations of pictorial value, the increase or decrease of depth of focus, my number five, is a most important thing in plain, straight photography. For instance, you are to make an out of door full length portrait of a man in a yard, with a background of hedge and trees with a suggestion of house in the distance. As per number three and four, you do it with wide open lens. The same man wants a picture of his house and grounds and places where he stayed, a photograph of a bicycle or a motor car; you now stop down, with the same focus. In the first picture, the background was inoffensive and hazy, in the second your reduction of the cones of light has caused the house, hedges and trees to come up sharp, and while decidedly unpictorial, you have a good commercial photograph showing the house and grounds as they appear to one who looks them over carefully, and pleasing to the one for whom you made the picture. Ofttimes, in taking a picture of something in motion, say a horse, with a hand camera, you cannot be sure that it will stay in the right relation to your camera long enough for you to do the work, so you stop down to some extent, increasing the depth of focus of your lens, and bringing the point of infinity, beyond which all objects are in focus, much nearer to you. By this means you allow yourself and your subject latitude for movement, and can make the picture with much greater chance of success than if you used a large stop. The possessor of a fine lens and first-class camera sometimes wonders why his little sister with a small fixed focus kodak has so much larger a proportion of successes than he has. It is because she is not troubled with focusing problems, her lens being fixed focus, of stops sixteen or smaller and of short enough focus to provide great depth, her infinity point being ten or twelve feet.

But the stopping down for depth of focus must be carefully considered with reference to the amount of time which can be given. In bright light slow snaps can be made at sixteen or less,—with a focal plane shutter and bright light a slow snap can be made at the smallest stop on the lens. In a poor light this can't be done and the picture must be made with a large stop unless time can be given.

This brings me naturally to my number six, the use of stops to control timing. Sometimes it happens that we want to increase the time on a picture. For instance, on a bright day at the seaside, we make as fast a snap as we can to catch a sun-lit, breaking wave. But what we want is a little slurring of the image, to prove motion, and to do away with that painful wire-drawn sharpness of an object arrested in mid-air, its motion frozen to the plate. If we slow the time down, we overexpose. So we stop down to overcome this, thus getting our longer time without losing our proper value of exposure. Again, sometimes we wish to make a change in the picture while it is being taken; for instance, I know of a case where a man wished to photograph himself in a group of friends. He hadn't enough cord to reach to the shutter, but he had a big white rope. So he used that, put the shutter at its longest automatic exposure,—five seconds,—stopped down to 256 and went ahead. After pulling the rope, attached by what little rope he had, to the shutter, he flung it away from him, so that it would not make a white streak down the green lawn in the picture. His picture was being taken while he threw it, of course, but he threw quickly and froze to his attitude immediately, and you would never suspect by seeing the picture the way in which it was made.

Number seven will be news to some of you. The eyes look at an object from a certain distance apart. One eye looks through a small hole alone. A lens acts as one eye. When the size of the lens exceeds the size of the human eye distortion is set up. It is unnoticed and unmeasurable in pictures a short distance from the lens, but take a life-size copy of an object made with a two-inch-in-diameter lens. The image of one point on this object is made by the whole lens; one part of the lens, say the left side, forms an image of the object on the plate; the right side, *two inches* to the right, forms the same image; but inasmuch as the object is very close,—twenty inches if it is a ten-inch lens, two inches change in position of the parts of the lens forming the image makes a big stereoscopic difference in the image. These countless images all from a slightly different point of view overlap, but they don't quite coincide, and a distorted picture is the result, showing more of an object than the eye could see from the same position. Stopping down, of course, by decreasing the diameter of the active part of the lens, obviates this curious little difficulty. The whole thing is of importance only in exact and scientific photography.

Another point, my number eight, is that by stopping a lens down enough it can be racked into or away from the true focus without destroying that focus, an eight-inch lens can be made to work at seven or nine inches if stopped small enough, thus making a decided, if not great, change in the size of the picture. This is an expedient,—it doesn't do always, but at a pinch it is a handy trick to know.

Finally, number nine, increasing the covering power of a lens,—a good lens will cover, in size of image circle, a larger plate than the one listed for. For instance, I use a Goerz series III of seven inches as a wide angle lens on an eight by ten plate. It covers excellently at 16, although rated for a $4\frac{1}{4} \times 6\frac{1}{4}$ plate. But it needs stopping to sixteen to sharpen up the edges.

A Reflecting Attachment for Cameras

By E. H. Williamson, Jr.



THE device described in this paper was constructed by me for my own use, for the purpose of obtaining an instrument having the advantages of a "Reflex" at less expense, and with decreased weight and size. In this camera, as in a "Reflex," the image is in view up to the moment of exposure, for the purposes of centering and focusing. My regular camera was used in connection with the attachment without interfering with its capacity for ordinary work, and without injury. The description given is for a 4 x 5 inch camera having a detachable or reversible back, although the latter cannot be used reversibly in connection with the attachment. Fig. (1) shows the camera and attachment complete, the side being removed to show the interior. In this figure (A) is a box of $\frac{1}{4}$ inch hard wood of the same size and width as the original camera, and $2\frac{1}{2}$ inches deep. It is open front and back, and the right side should be put on with screws to allow of its removal. One-eighth of an inch from the rear is a partition (A), of cigar box wood, having a 4 x 5 inch opening in the middle. Close behind this is a curtain shutter, similar to the one I described in *THE CAMERA* of August, 1905. For the benefit of those who have not read this article, I will repeat the description briefly.

On each side of the interior of the box (A), are screwed strips of 1-16th inch brass (B), $5\frac{3}{4}$ inches long. At points $\frac{3}{8}$ inch from each end are drilled holes, those in the left hand strip being 1-16th inch diameter, those in the right $\frac{1}{8}$ inch.

The $\frac{1}{8}$ inch holes are continued through the side of the box.

From two ordinary round lead pencils cut two pieces long enough to reach across the interior of the box, less $\frac{1}{2}$ inch.

On one end of each pencil, screw a bicycle valve cap of the Morgan & Wright type. On the other ends screw the hollow point caps called the Schroeder. These hollow points are to be threaded inside with a 4-40 thread. The pencils, which form the rollers of the curtains, are now placed in a horizontal position at the top and bottom of the box (A), (see C C), the points resting in the holes in the strips as bearings in which they should revolve freely. The ends of the Schroeder caps should project a little beyond the outer surface of the right side of the box, the $\frac{1}{8}$ inch holes in the brass and wood being reamed out, if necessary. The right side of the box will have to be removed to get the rollers in and is then replaced permanently.

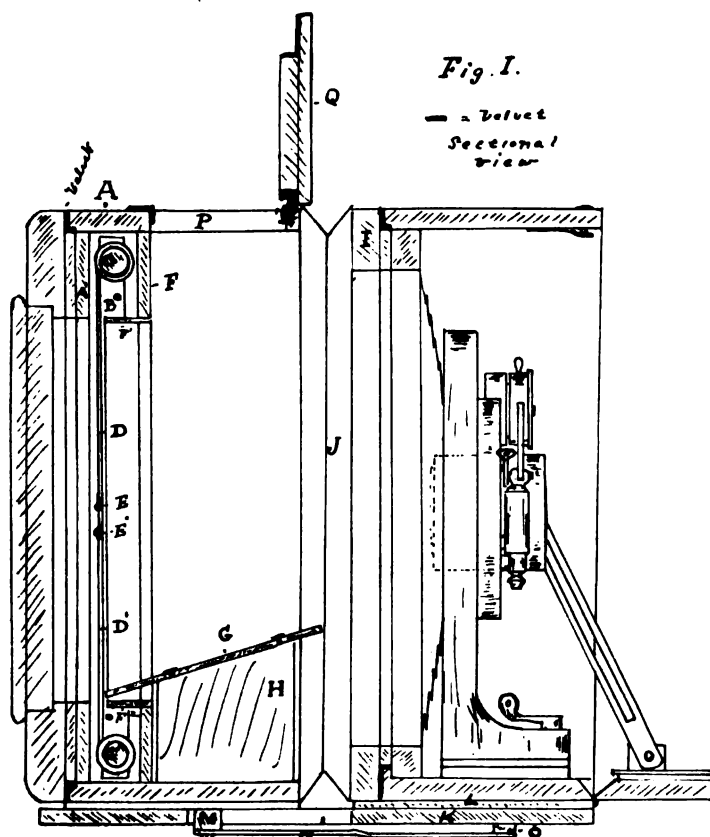
The curtains consist of strips of very thin "sciver" leather, the upper one (D) being black, and the lower, (D'), white.

They are 9 inches long and $\frac{1}{4}$ inch less than the interior width of the box, so as to leave $\frac{1}{8}$ th inch margin on each side.

One end of each curtain is rolled and glued around the pencil, rough side out, for three turns, and the free ends are stiffened by being folded and glued over strips of thin stiff brass 3-16th inches wide and as long as the width of the curtain. Close to the ends of the strips are drilled 1-16th inch holes, and to those

in the upper bar are tied 4 inch lengths of strong shoe thread, provided with little wire hooks at the free ends. These strings are threaded through the holes in the lower bar and the hooks are inserted in sets of holes drilled along the bar. These holes are so placed that, when more or less of the strings are pulled through the end holes, and the opening between the ends of the curtains is thereby varied in width, the latter may be held at fixed openings, such as $\frac{1}{8}$ th, $\frac{1}{4}$, $\frac{1}{2}$ and up to the full width of 4 inches, by inserting the hooks in the proper holes. Close to the rollers is a second partition (F), exactly like the first, except that it has $\frac{1}{2}$ inch strips of black card board (F') (F'') projecting toward the curtains, all around the 4 x 5 opening, to prevent light from getting around the edges of the curtains. (G) is a piece of clear mirror glass 4 inches long by $2\frac{1}{2}$ inches wide, which is supported at an angle of 25° above the horizontal by the block (H). The rear edge is 1 inch from the bottom of the box, the upper, $1\frac{2}{3}$ inches. (I) is a frame of $\frac{1}{4}$ inch wood with an $\frac{1}{8}$ th inch rabbet adapted to fit snugly into the rear of the camera box, and has a 4 x 5 opening in the centre.

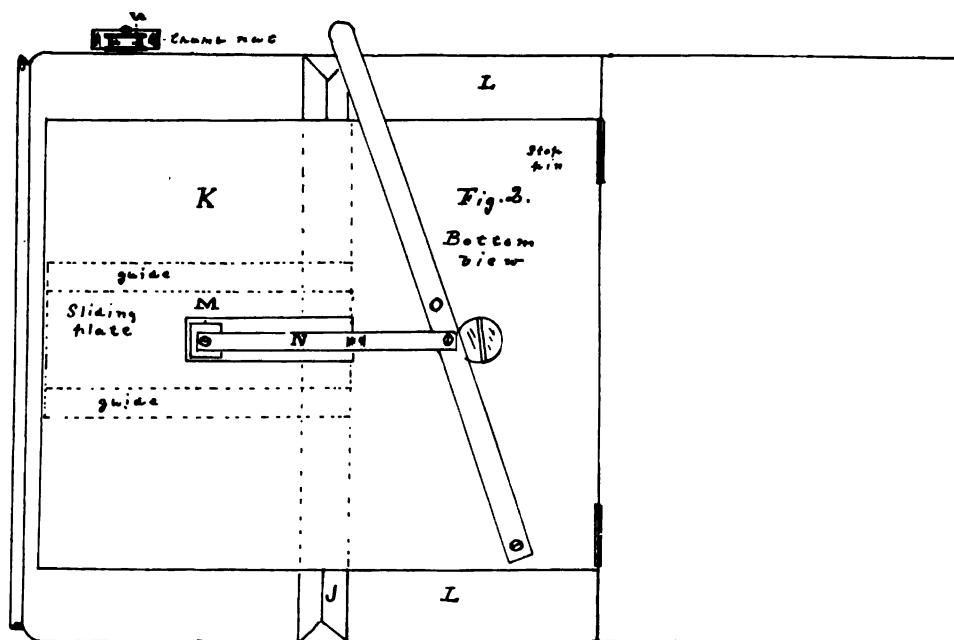
It is connected with the shutter box by a short bellows (J), consisting of two folds of "Italian cloth" lined with black muslin, with $\frac{1}{2}$ inch Bristol board par-



titions. The frame (I) is held to the camera by the brass strips (I') (I') and to the bottom of (I) is screwed the base board (KL), (L) being of cigar box wood, the same size as the bottom of the camera, and (K) of $\frac{1}{4}$ inch stuff, $5\frac{1}{2}$ inches long by 5 inches wide. This base is firmly attached to the bottom of the camera by a flat head machine screw, driven into the tripod socket. At the centre of the bottom of the shutter box is screwed a strip of $\frac{1}{8}$ th inch brass $1\frac{1}{2}$ wide by $2\frac{3}{4}$ inches long, having the edges beveled at an angle of 45° . This plate slides in similarly beveled guides of 1-16th inch brass, which are screwed to the surface of the base (K). The plate should slide easily in the guides, but with no side play.

A $\frac{1}{2}$ inch slot, $1\frac{1}{4}$ inches long is cut in the base under the centre of the plate, and to the latter is soldered a $\frac{3}{8}$ th square block of brass (M), the bottom of which is drilled and tapped with a 4-40 thread. A short brass link (N), connects this block with a lever (O), which is screwed to the bottom of the base board (Fig. 2), which gives a view of the bottom of the camera, shows the idea clearly. Returning to Fig. (1), at the top of the shutter box is cut an opening (P) $1\frac{1}{2}$ wide by 3 inches long. Hinged to the box is a trap door or shutter (Q) 6 inches long by $2\frac{1}{2}$ inches wide, having a rabbet which fits into (P) when the lid is down. Fig. (3) gives a side view of the camera, showing the shutter mechanism, and the method by which it and the trap (Q) are controlled. Into the end of the cap in the upper roller is driven a 4-40 machine screw, upon which has been threaded a small toothed wheel (R) and a round disk of brass (see dotted circle, also Fig. 2), by which the roller is revolved.

The screw is driven in until the wheel and disk are jammed tight against the point of the valve cap. To the lower roller is attached in the same way a

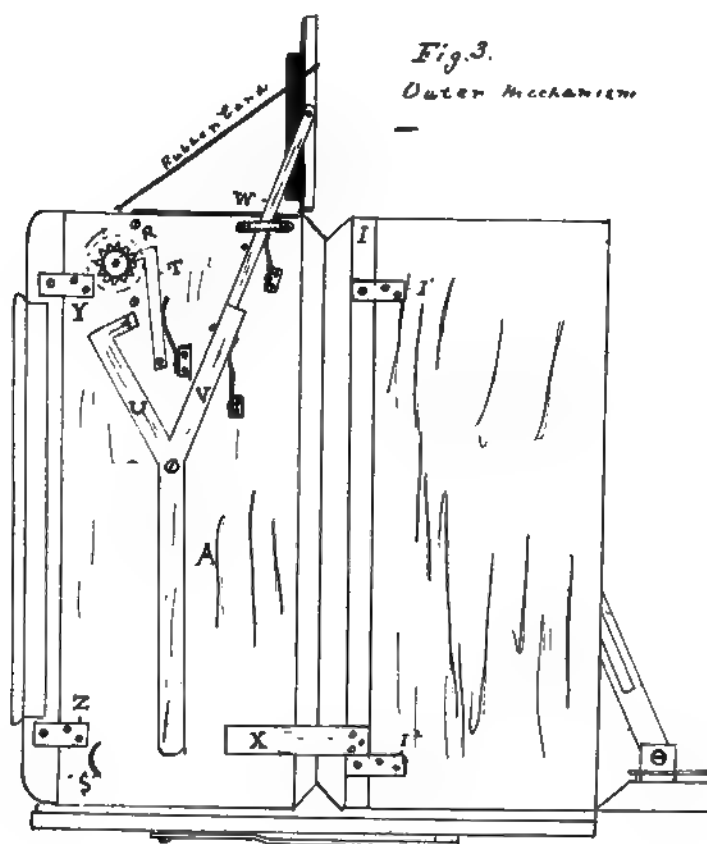


grooved wooden pulley (S) $\frac{1}{4}$ thick by $\frac{1}{2}$ inch diameter. A piece of shoe thread is wound around the pulley from left to right and terminates in a strong rubber band which is hooked over one of a series of pins, as shown.

The pinion (R) is locked by a pointed arm (T), which is held against it by a small spring. The lever (U) (V) is pivoted at the centre, the arm (U) lying a short distance back of the lever (T) and the arm (V), supporting the leg (W), attached to the side of the trap (Q), holding the latter up against the pull of the rubber band. All three springs shown may be obtained from a discarded alarm clock. A fixed bar (X) is screwed to the side of the frame (I), so that it will strike the lower end of the forked lever, when the shutter box is moved forward on its slide.

The interiors of the box (A) and frame (I) are to be painted or stained a dull black, as are also both sides of the WHITE curtain (D'), except that portion of the glazed side which lies opposite the opening in the partition (F) when the curtain (D') is extended to the top of the box. To avoid possible light leaks, the rear edge of the shutter box and the rabbetted side of the frame (I) should be faced with a double thickness of black velvet.

The inner face of the trap (Q) and the surface of the box around the hole (P) should be similarly treated.



The camera back is held to the shutter box by small brass strips (Y) and (Z). The operation of the camera is as follows: The upper roller is turned until the slit between the curtains has been wound up to the top of the box, and the rubber band is tightly stretched by the winding of the string upon the pulley. The dark slide of the plate holder is withdrawn, and the trap (Q) is raised until the arm (W) catches on the top of the lever arm (V). The front board of the camera is dropped and the lens opened and run out until a sharply focused image of the object in view is seen in the mirror, reflected *from the image thrown by the camera lens upon the white curtain.*

When ready for an exposure, the lever (O) beneath the camera is pulled back which draws the shutter box forward until the plate occupies the position in the focal plane previously held by the curtain. During this movement the bar (X) has pushed back the lower end of the lever (U) (V), first releasing the trap (Q), which drops and closes the opening (P), and then moving the arm (T), which releases the pinion and allows the curtain to drop, making the exposure. The adjustment of the movement of the shutter box and lever is best done by experiment, as it is essential that the trap should drop first and that the shutter is not released until the very last moment. The amount of forward movement necessary for the plate should be carefully gauged by first focusing on a distant point on the curtain, and then moving the box forward until the same point is focused on the ground glass.

A stop pin put at this point will thereafter keep the movement correct. When the rubber band is hooked upon the top pin the curtain will drop in about 1-25th of a second, which with a $\frac{1}{4}$ inch curtain opening will give an exposure of about 1-400th second.

An anastigmat lens, with an aperture of f 6.8 or more will be found necessary to obtain the full advantage of the exposures given by this or any other focal plane shutter, but good work can be done with an ordinary rectilinear if the curtain slit is widened to $\frac{3}{8}$ th inch or more, with a lower curtain speed.

This will be found satisfactory for foot ball games or the like. As I said in the former article, "do not try to see how fast you can run the shutter," but give all the time possible, and you will save a waste of many plates. Finally, don't draw the dark slide before winding up the curtain, as the open lens will give the plate an unintended exposure as the slit travels upward. If a curtain shutter has been already built according to the directions given in the August CAMERA, it can be adapted to this attachment by cutting off the lower black curtain, and glueing in its place a piece of white sciver.

The shutter can then be fitted to a shallower box (A), than if it were built into the latter.



Photographic Inexactitudes

A NOTE ON CORRECTION AND DISTORTION

By P. R. Denham

IN THE production of caricatures of one's friends, one must choose the subjects with tact and discretion. When, however, the caricature is produced photographically in the manner described below it cannot fail to be regarded as amusing and harmless, in which spirit, I trust, all readers who attempt the method will make the prints.

Any ordinary glass or film negative can be employed, and subjects with strongly marked outlines, such as portraits, figure studies, or groups, lend themselves best to this process of distortion by reproduction.

Views of well-known buildings and interiors are also capable of considerable misrepresentation, but the amateur photographer is possibly well advised to confine his attentions to portraits of friends who will appreciate a mild joke at their own expense.

A daylight enlarger will be required. To obtain the necessary depth of focus involved in the process, the lens must be stopped down to its smallest aperture, and this procedure cannot be carried out satisfactorily with artificial light and condenser.

The negative should be soft and fairly thin, otherwise a very long exposure will be needed. On a bright day at this time of year, with a thin negative and the lens stopped down to $f/64$, a well-exposed print can be obtained in from three to five minutes at midday.

In winter at midday with a thin negative, quick bromide paper may require at least thirty minutes' exposure. A trial exposure of different length may be taken, if necessary, on a strip of bromide paper of the same speed to ascertain the correct time, but the error will usually be on the side of underexposure.

The apparatus (Fig. 4) is simple in construction, and consists of an ordinary camera with the focusing screen removed, fixed on a small raised platform (a),

which is fastened to two three-inch planks (*bb*) about three-quarters of an inch apart. A drawing board (*c*) on which the focus, and free to move along *bb* and swing horizontally at thumb-screw (*d*) completes the apparatus.

The negative is placed in the camera in the place usually occupied by the ground glass, or in a dark-slide with both shutters withdrawn.

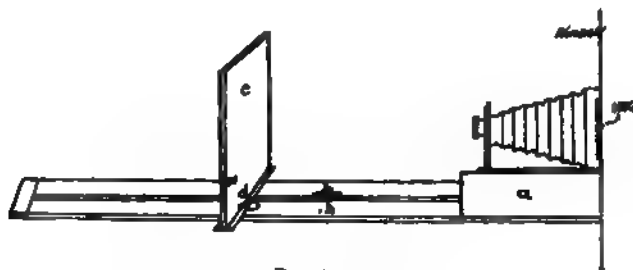


Fig. 4.

A window with an uninterrupted north light, or with a reflector of card, is completely blocked up by means of a shutter or other form of screen, so that light can only enter through a hole just large enough to take the end of the camera. This is the plan usually adopted when making enlargements by daylight, so needs no further description.

The end of the camera containing the negative is so arranged that it fits the hole in the blocked-up window, and the only light that enters the room passes to the drawing board *via* the negative and lens. The image of the negative is thus projected on the sensitive paper. The base board and entire apparatus are, of course, supported steadily, so that there is no vibration.

The photographer having decided which way he wishes to distort the picture, proceeds to focus same on a piece of plain white paper on the board. Fig. 1 is a direct print, and if it is required to distort it, as in Fig. 3, the negative is put in the back of the camera upside down (vertically), with film facing lens. The board is then swung round to an angle of about 45 degrees with the edges of *bb*.

When focusing, it is necessary to get the centre of the principal object sharp with open aperture, and then stop the lens down until the whole picture is well defined, which invariably means using the smallest aperture the lens will permit. Needless to say, the more acute the angle the greater will be the distortion.

If, however, it is desired to lengthen the features, as in Fig. 2, the reversing back of the camera is used, and the negative is placed in position horizontally. This may be done equally well with the negative in the same position as for Fig. 3, but it would then be necessary to have a vertical swing to the focusing board, which is, I consider, quite unnecessary. To get an evenly exposed print, that part of the paper nearest the lens must be slightly shaded during exposure, or it will be more fully exposed than the part furthest from the source of light. Smooth bromide paper, either glossy or matt, should always be used for this work. When rough paper is thus worked at an angle, shadows are thrown, which after development give the print a mottled appearance.

DUPLICATES.

Development is conducted in the ordinary manner, but if a great number of similar caricatures are wanted from any portrait the exposure is best made on a dry-plate.

In this case the exposure is very much less than for bromide paper, and the result is a glass positive. From this positive a negative is easily made by contact, and prints can then be made in any number very quickly in the ordinary printing-frame.

If it is desired to distort a finished photograph or print, it will be necessary to first copy it, and use the negative thus made. Lantern slides or transparencies will, of course, give a negative straight away, and a plate should be used.

CORRECTING DISTORTION.

The application of the method described above for the correction of views already distorted is probably of considerably more interest to the serious worker than the production of camera caricatures.

There are not many photographers who have not at one time or another obtained negatives of street scenes with the houses looking to each other for sup-



port, or an architectural study with columns out of plumb, caused by the absence or misuse of swing back and rising front.

Fig. 5 is a direct print from just such a negative, and many a negative similar to this has been thrown away as useless, which, had it been dealt with properly (see Fig. 6) would, no doubt, have turned out quite satisfactory.

The procedure is practically the same as in causing distortion, with this exception, that the focusing board, except in very bad cases, need not be used at such an acute angle. To obtain a print with the buildings perpendicular, a piece of paper should be pinned to the board with two or more lines ruled horizontally and parallel to each other. The negative is placed in the camera so that the lines to be corrected are in a horizontal position. The board is then swung until the vertical lines of the buildings coincide with the parallel lines on the board. In using only the horizontal swing of the board, it must be borne in mind that the negative must be placed in the camera so that the vertical or upright lines to be corrected are horizontal on the screen.—*The Photographic News*.

A Simple Pyro Container

By W. S. Buvinger



THE MANY convenient forms in which the standard developers are placed upon the market enable us to prepare small quantities of fresh solutions with little trouble and expense. In many cases, however, each packet of dry developing salts contains a quantity sufficient for developing from six to ten plates. If the photographic worker has but one or two plates to develop, he fails to use all of the solution and it soon oxidizes and becomes unfit for further use. Even if the made-up developer is stored in bottles, it cannot be used after a few days with the assurance that the result will equal that obtained from a fresh solution. This fact makes the development of one plate expensive and troublesome if one desires to obtain the best results.

There are many amateurs whose love of the beautiful photographic art remains with them the year around. If such enthusiastic workers could procure a few drams of fresh clear pyro, mixed to formula in ten seconds after entering the dark room, there would be many an odd plate exposed and developed during the year on account of the pleasure and convenience of doing it. It was to meet this demand that the writer devised the apparatus herein described. This apparatus will permit fresh pyro developer for one plate to be made up at any time during the year, and the stock pyro will remain clear for months if the instructions for the use of the container are carefully followed. A similar apparatus may be used for the sulphite solution if desired. The construction of the container is simple and any one handy with tools can make one in a few hours.

Procure a wine or other suitable clean bottle of clear glass holding one quart. With a hand-drill, well lubricated with turpentine, make a hole one-eighth of an inch in diameter through the thinnest portion of the bottom of the bottle. Make a tight plug for this hole of soft wood. Construct a framework of wood to fit the bottle after the design shown in the accompanying figures. Allow one-sixteenth of an inch play between the framework and the glass in order to permit the bottle to be removed easily. The neck should pass through a square support with a circular hole cut in it. This support will sustain the weight of the bottle and contents, and will keep the neck in a vertical position. A small notch in the edge of the hole permits the stop-cock to pass through. This stop-cock must be of glass, neatly ground and fitted. It may be obtained at any supply house for chemical apparatus at small cost. The same people will probably supply a perforated rubber cork of size to fit the bottle. It must be a good fit and should require some force to thrust it into place. Tie it in securely with copper wire. After the branch of the cock has been thrust through the cork, remove the glass plug and wipe the tapered hole and plug thoroughly clean and dry. With the finger or a small stick, lubricate the ground surfaces of the cock and its plug with beef tallow. Do not use lard or vaseline if you wish the apparatus to give the best results. Insert the plug and press it firmly into place with a twisting motion. Pass a clean wire through the stop-cock to remove any surplus tallow that may obstruct the passage of the liquid.

If for any reason the plug must be removed, again lubricate it with fresh tallow before replacing. The branch of the stop-cock should pass through the rubber cork and project one-fourth of an inch in order to prevent sediment from passing out when the cock is opened.

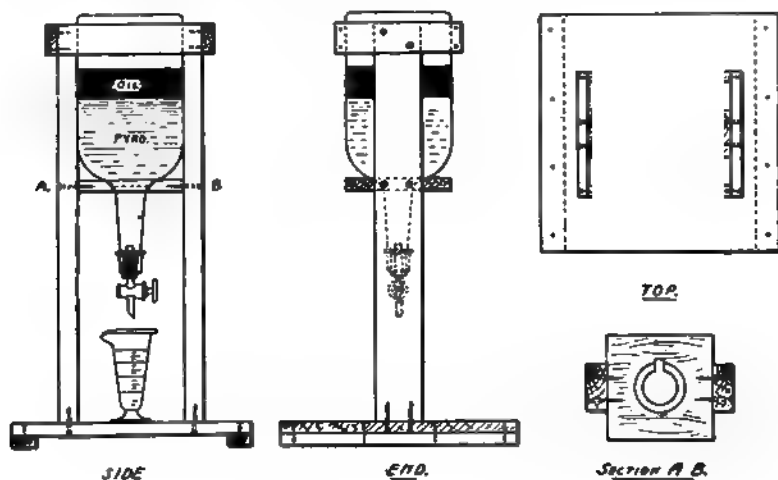
Close the drilled hole in the bottom of the bottle and wipe the neck dry inside. A suspicion of tallow rubbed inside the neck with the finger tip will let the cork in easily. Now mix the pyro solution, using recently boiled distilled water that is free from dissolved air. With a funnel, pour the solution into the bottle with as little splash as possible. Then add one-half a pint of filtered and water-white petroleum and insert the cork.

Place the stop-cock in the position of "open" and with the wooden framework in an inverted position, lower it down over the bottle. As soon as the stop-cock passes through the supporting collar it may be closed and the entire apparatus brought to the position shown on the figure. Rotate the bottle on its collar to bring the handle of the stop-cock into the most convenient position for turning.

The petroleum floats on the pyro solution and shuts out the air. Avoid dashing the solution about so as to break the petroleum layer. Petroleum has no noticeable effect on the pyro after months of time, and is quite inert chemically. The small hole in the bottom of the bottle should be closed with a loose plug when the apparatus is not in use, to keep out dust. It should be opened to allow the air to enter while drawing off the solution below.

The most convenient way to use the apparatus is to hold the same in the hand, with the graduated glass on a level with the eye and in line with the dark room light. The divisions on the graduated glass can be readily seen, and the exact quantity of solution run out through the glass stop-cock.

If at any time the glass stop-cock should turn hard or permit the solution to exude in the form of a white frost-like excrescence, invert the bottle and lubricate the stop-cock with tallow after wiping it dry and clean. If properly cared for, pyro will remain clear for eighteen months in this apparatus, and the painstaking amateur may feel that with it he can obtain a clean and fresh bath for one or two plates at a moment's notice at any time during the year.



Transparencies by the Ferroprussiate Process

By E. Claypole



HERE is a common saying that, "there is nothing new under the sun," and although the writer claims a certain amount of originality for the following method, doubtless other workers have experimented in the same way, and probably have obtained results equally successful.

Some time ago I had occasion to make a number of prints by the Blue printing process, and the idea occurred to me that a transparency by this method would be particularly interesting.

I made a number of experiments with satisfactory results, and now have pleasure in giving my mode of procedure:—

Take an old negative, the film of which is entirely free from scratches, or an undeveloped plate, and soak in clean water for a quarter of an hour to soften the film. If an undeveloped plate is being used, clear with hypo, or if an old negative, clear away all signs of an image by the ordinary reducer, and well wash in running water for at least an hour. This washing must be complete, for the slightest trace of the clearing solution left in the film will result in yellow or green stains in the final positive.

Make up sensitizing solution as follows:—

A

| | |
|----------------------------------|--------|
| Citrate of iron and ammonia..... | 1¼ oz. |
| Distilled water | 6 oz. |

B

| | |
|---------------------------|-------|
| Potass ferricyanide | 1 oz. |
| Distilled water | 6 oz. |

These solutions will keep indefinitely if stored in a dark cupboard.

If the plate has been allowed to dry after washing it must be again soaked for a few minutes, or the sensitizing may be performed as soon as the film is free from the reducing agent.

Take equal parts of A and B, mix just before use, and if necessary filter, place the plate in a tray and flood with the mixture, taking care that enough is used to well cover the plate. Allow to soak for three minutes, with an occasional gentle rocking of the tray and then give a quick rinse in clean water, taking care that no drops of water or the solution remain on the surface of the film. These should be removed with a tuft of cotton wool, as if allowed to remain they would result in spots in the transparency. This operation should by preference be conducted in artificial light; ordinary gaslight will produce no harmful effect. Dry quickly by standing with one corner on a piece of blotting paper, in the dark, or a few feet from a clear fire in the evening under a table, care being taken that no white light is allowed to reach the now sensitive plate.

When quite dry clean the glass side and place in a printing frame in contact with the negative, film to film, and print by preference in direct sunlight.

Depth of printing may be judged by viewing through the back of frame by transmitted light, and when correctly printed the shadows should be a deep, transparent blue.

Development is, as in the paper process, by washing in water, but to the final water add 3 or 4 drops of hydrochloric acid; this will intensify the image, and make the general effect more brilliant. Again well rinse and when quite dry, if the result is not satisfactory (which is very unlikely if the instructions have been faithfully carried out) the whole process can be repeated, the positive soaked, re-sensitized, and when again dry, carefully fitted over the original negative, and printing completed; or the whole may be cleared by flooding with a dilute solution of caustic potash (a piece as large as a pea dissolved in 3 ounces of water), and we may commence operations again on a fresh negative.

The final operation consists of mounting the finished transparency, and this must be left to the artistic judgment of the reader. He may bind in the passe-partout style with a piece of glass and hang in a window, he may use tinted papers with varying effect, or he may stain other old negatives (after clearing as before mentioned) with various dyes. If he stains with yellow he will produce a transparency in green, etc.; in fact, he may in a small way realize the delights of the tri-color process of photography. There is no limit to the possibilities of the process in the hands of an interested worker, and further, instead of, as in so many photographic processes, his results being liable to fade, the transparencies obtained by this method will increase in brilliance by the action of the light. Try it, and the simplicity of the operations and the delightful results obtained will be the delight of yourself and the wonder of your friends.—*Focus*.



AN INDEPENDENT MONTHLY MAGAZINE DEVOTED TO THE
ADVANCEMENT OF PHOTOGRAPHY

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FEBRUARY, 1907

Views at a Distance and Nearby

The great diversity presented in pictures obtained at varying distance is not always taken in consideration when selecting a lens for a particular subject. Modern skill has given us extremely wide angle and telephoto lenses, the former admitting of close approach to the object and the latter presenting a good sized image of a distant object. This peculiarity of the telephoto lens is made use of with avidity by those who believe that the photograph so obtained has a more natural appearance, but an examination of the result often disappoints, especially if architecture is a feature in the distant view. With a wide angle lens a building photographed in the distance a little greater than the height of the structure itself, shows the roof lines strongly inclining downward in perspective, while the foot lines have a corresponding upward direction.

If we employ a lens of less angle and longer focus and increase the distance about ten times in order to make the object the same size, a view is thus obtained which does not show such exaggeration in per-

spective, the roof lines and the base lines are not so much inclined as in the negative made with the narrow angle lens. Let us now increase the distance considerably—that is, take the object at a great distance with a telephoto lens so as to have it of the same size as the other two, and we shall find that the slope of roof and base have entirely disappeared and we have no perspective of the building at all. It seems to have no corners, and looks more like a blank view of the front projection—a mere rectangle with a dividing line, hence the disappointment of the photographer, who looked for something plastic in his subject. All artistic effect is nullified and the picture is what is called flat, varied only by difference of light and shade.

On general principles the best distance from which to photograph an architectural subject is about three times the height. The application of this principle to portraiture is also apparent. Of course, in portrait work, the exaggeration is not so perceptible as in architecture, but to the critical eye it is offensive. A great many portraits are taken too close up. The defects are more apparent when enlargements are made from such negatives. Not only is there distortion artistically, but even the expression of the sitter is changed. But it occurs to us we have previously touched upon this topic in an article on expression in portraiture. Just here we wish to emphasize the importance of adapting the lens to the subject under consideration.

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A Preservative for Sulphite

Everyone knows that sodium sulphite is used as a preservative for all the developing agents, and its action is due to the fact that it absorbs oxygen quicker than the developing agent itself. Various methods have been from time to time adopted to prolong the life of developing solutions containing sulphite, such as the addition of an acid or an acid salt like potassium metabisulphite. The latest idea, emanating from Herr Weissenberger, of St. Petersburg, is the addition of 2 per cent. of mannite, the sugar obtained from ordinary manna. This, it is stated, will keep sodium sulphite solution practically unchanged for six months.—*Bromide Monthly*.

Should the Photographers Follow Plate Makers' Formulae?

There is one feature about the formulae furnished by the plate maker which "gives us pause." These directions, which it seems rational to suppose the best adapted for the particular brand, are compiled almost exclusively for the professional in the portrait studio, to whom the saving of time is a great desideratum. Any formula which would advocate prolonged development would be undesirable, inasmuch as the operator is anxious to know at once the result of his sitting so as to dismiss his patron and proceed with the next. Slow development during the busy season is out of the question, meaning a pecuniary loss, and hence a vigorous dose of alkali is administered as recommended. But there is great advantage in slow development, and the intelligent worker will cut down the alkaline solution considerably below the plate makers' directions.

There are two decided advantages accruing from slow development: First, control over effect and second the production of a finer deposit in the film. Slow development with judicious increment of alkali gives delicate deposit of image, while the vigorous action of chemicals piles up coarser molecules and where the negative is intended for enlargement or for making lantern slides, one needs not to have pointed out the superior advantage of fine deposit. As to the second consideration, control over the result. The character of the development determines the artistic character of the negative whether it should be soft and full of gradation, or vigorous and possessed of contrast. So it is apparent that one formula is not applicable to all sorts and conditions. We are glad to see that many professionals are adopting the tank method of development. They are assured that their exposures are correct and possessed of this faith consign their plates to the dilute bath in confidence that slow development will work out their salvation.

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REDUCER FOR OVER-PRINTED PROOFS

A—Ammonium Sulphocyanide . . . 10% sol.
B—Potass Ferricyanide 10% sol.
A, 5 ozs.; B, ½ oz.; Water, 24 ozs.

All questions relating to technical matters, processes, working instructions, etc., are referred to competent experts in the particular subject referred to, and the utmost is done to insure reliable and practical answers being given.

Correspondents are requested to first state their case and then number each question; they should also write on one side only of the paper, and enclose correct name and address—not necessarily for publication. No attention will be paid to anonymous communications or those only signed with initials.

We do our best in all cases to publish the replies in our next issue following the receipt of the inquiry, but cannot absolutely guarantee this.

All inquiries should be addressed to THE CAMERA, 123 South Eleventh Street, Philadelphia.

No questions answered by post. No prints criticised.

PYRO STAINS.—Please give recipe for clearing pyro stained negative.—M. B. P.

Iron Sulphate 3 oz.
Water 16 oz.
Sulphuric Acid ¼ oz.
Alum 1 oz.

PERMANGANATE REDUCER.—Can you furnish the formula for permanganate of potash as a reducer? I understand that it will reduce the high lights the same as persulphate of ammonia. Am I right?—F. N. T.

A

Permanganate of Potash 24 gr.
Water 1 oz

B

Sulphuric Acid 24 minims
Water 1 oz

For use:

1 dram A
2 drams B
8 ozs. Water

This solution works rapidly, reducing the high lights without apparent reduction of shadows.

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Folmer & Schwing Co., of Rochester, N. Y., are desirous of securing negatives of motion pictures made with the Graflex Camera. For suitable negatives of this kind they will exchange goods of their manufacture. Those who use the Graflex and have negatives of this character might find it of interest to submit their prints to Folmer & Schwing Co., Rochester, N. Y.

A flash powder that can be mailed and is permitted to go through the mails by the U. S. postal authorities, is certainly safe, and that powder is the Agfa Blitzlicht. It possesses so many qualities distinctly its own that you should send 35 cents for a full-size package to the Berlin Aniline Works, 215 Water St., New York.

An exhibition of photographs by Baron Adolph De Meyer, of Dresden, Germany, and by George H. Seeley, of Stockbridge, Mass., will be held at the Little Galleries of the Photo-Secession, 291 Fifth avenue (between Thirtieth and Thirty-first streets), New York, opening on January 25th and closing February 14th. The galleries are open from 10 A. M. till 6 P. M. daily, Sundays excepted.

Just that little bit of coloring that you can so readily apply to an ordinary velox print with those Peerless Japanese Transparent Water Colors makes a barren subject one of some interest. The colors are so easy to apply and so moderate in price that you'll wonder why you did not try them before. The dealers have them, or address the importers, the Japanese Water Color Co., 144 E. Thirty-fourth St., New York.

Among the methods of removing varnish or ink from plates, the following is recommended by Mr. Joseph R. Ford, of the Photo and Process Department of the American Bank Note Co., New York, in a letter to "Process Work": "I will say that I have also experienced the same difficulty in that line, and, having tried a great many things, I cheerfully offer you my method. Take a piece of blotting paper a little larger than the plate, lay it on a flat surface and pour on a little chloroform. Then lay the plate face down for a few minutes, when the chloroform will frill up the surface of the ink, so that it is then easy to move with turps or alcohol."

Practically every amateur photographer has assembled more or less of a photographic reference library. Are you aware of the fact that three valuable additions to your library are free for the asking? The Eastman Kodak Company are now distributing through the dealers, or direct, the "Velox Book," "Bromide Enlarging with a Kodak," and "Kodak Home Portraiture." Naturally, these books are designed to further the interests of the Eastman Company and their products, but nevertheless, as good, practical up-to-date instruction books, they are unsurpassed.

The Velox Book, as stated on its cover, is devoted to the "working of a simple paper told in simple terms," and explains in detail every phase in the manipulation of this popular paper. It contains a glossary of technical terms invaluable to the novice, and the suggestions for double printing, masking and special manipulations make it invaluable as a working manual for all photographers.

Bromide Enlarging with a Kodak removes all the mystery from this fascinating branch of photography, and fully explains by means of clearly written text and explanatory diagram just how any amateur possessing a Folding Pocket Kodak, or in fact almost any camera, can produce with but trifling expense bromide enlargements of the highest quality. Descriptions of various grades of bromide paper and instructions for use are also included.

Kodak Home Portraiture will both fascinate and interest every photographer, whether novice or expert. It is a veritable art work, containing a number of remarkable examples of home portraiture, and all made with the simple Kodak. Good practical suggestions are made for making equally successful pictures, and from cover to cover it is replete with good things. Do not miss this opportunity to make a permanent addition to your reference library.

This month we have a competition on Home Portraiture, with the usual CAMERA medals as the awards. The Bausch & Lomb Optical Co., Rochester, N. Y., have just issued a booklet full of information on Home Portraiture that will be of great help to all. As you can have one of the books free, and THE CAMERA medals are worth having, possibly the hints found in the book and the proper application on your part may make you a medal winner.

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The conveniences provided for the amateur photographer to-day in comparison to the facilities offered his less fortunate brother of fifteen years ago are so numerous that photography has, accordingly, made tremendous strides. "Autogen," the automatic developer, made by Dr. Chas. L. Mitchell, 1016 Cherry street, Philadelphia, is one of the advances in photography, and upon request a liberal sample will be sent you. "Autogen" works wonders, and a test of it will prove its ability to "make good."

✽

A cold bath is prescribed for the Angelo Platinum Papers. The Angelo papers have always had a reputation for quality and uniformity and bid fair to excel their past record. The cold bath develops more slowly, thus affording greater control in development; even under the most trying conditions there is no evidence of solarization or smoky shadows, the prints coming from the clearing bath both clean and brilliant, with marvelous gradations from highest light to deepest shadow. The new Angelo Black and White Platinum papers, recently introduced, possess every good quality of the famous Angelo Sepia papers and are bound to win favor on merit alone.

✽

A correspondent wrote the Milton Waide Metropolitan School of Photography, New York, regarding the enlarging apparatus we published in October, and the following is their reply:

"Your inquiry, regarding enlarging apparatus, has been forwarded to me from THE CAMERA. Your letter is hardly sufficiently detailed to judge just where your trouble lies, as there are a number of details, all of which must be carried out in order to produce perfect enlargements. Providing that the apparatus is well constructed, on

the principles exactly as illustrated in the October CAMERA, that there is no white light entering the room from other sources excepting through the photographic lens, the trouble must lie in the manipulation itself. The first requisite, of course, is a good anastigmat lens, one that will cover a *flat field* with perfect definition. In focusing be sure to have the sheet of white paper tacked tightly against the Bromide support: also to focus with the lens at full aperture, so as to get the image as sharp as possible. When this has been done the lens should be stopped down to *F8* or *F11*. This is quite necessary, as the Bromide paper is apt to have a few little waves when tacked on the support. A sheet of 16x20 Bromide paper should have at least a dozen of, preferably, kodak glass push pins to hold it on the support as flat as possible. The object of stopping the lens down is to insure absolute definition over the entire picture. Providing you have good illumination (if working by daylight, using a sunny day) the exposure should range between thirty seconds and three minutes. Providing that the mentioned details are all observed, I can see no possible reason why your results should not be perfect, unless there is vibration during the exposure.

If there are any further details that you would like to know, if you will write to that effect, I will endeavor to answer fully, but I think that if you will follow the suggestions as made, you will have no trouble in securing proper results."

✽

"All things come to him who waits," and after the "waiting" the beautiful 84-page catalogue of the Goerz Lenses comes to hand. The gratification of being the possessor of this truly edition de luxe places one in an enviable position. The cover is from the prize picture of Ed. J. Steicher, of the Goerz Cover Contest in 1905, and is printed in two colors and gold. The frontispiece is a handsome photogravure by Radcliffe Dugmore and worthy of a mighty handsome framing. The rest of the book is replete with good lens information and practical examples of the work of the Goerz lenses. A copy will be sent upon receipt of nine cents in stamps to cover postage cost—the book is free. The C. P. Goerz American Optical Co., 52J Union Square, New York.

In a recent number of *THE CAMERA*, C. H. Claudy, the popular writer on photographic topics, has this to say regarding tank development: "It has been proved, by logic, by experiment, and by rule of thumb, time after time, that tank development does all that hand and eye nursing can do, yet there are thousands who refuse to believe what is known as a fact, and who still stick to the old red light, hot stuffy room and variable formula methods." Mr. Claudy is a newspaper photographer, who from the very nature of his business cannot afford to take any chances whatsoever, yet he uses films whenever possible and *tank development exclusively*. It is certainly astonishing the quality of negatives turned out by this method, to say nothing of its cleanliness and convenience.



"A little curl on the head of a little girl" is a good thing in the right place! The Kodak Dry Mounting Tissue has no curl even on the thinnest mounts, and its right place is in every photographer's workroom. For mounting squeegeed or ferrotyped pictures it is ideal, as it insures perfect contact without destroying the glossy surface. With Kodak Dry Mounting Tissue you are certain of absolute adhesion and flatness, and the difficulty in working with folders or multiple mounting is entirely overcome. The process is simple: cut a piece of the tissue to the proper size, tack it to the back of the mount with the point of a hot iron, place print and tissue in proper position on the mount and press with a hot iron—"that's all." Once try it and you will never use any other.



The tank development of plates is rapidly coming to the fore and we believe it will not be many moons before this method of development of plates or films will become general. One or two of the leading manufacturers of photographic apparatus have given an impetus to the system by the introduction of highly efficient tanks, which not only simplify the work of development, but make it an interesting pleasure. The Ingento Automatic Developing Tank for plates, illustrated herewith, is one that speaks for itself as being a thoroughly practical and up-to-date tank, combining all of

the features necessary to make the labor attached to the development of plates pleasant. Ask your dealer to show you one or get descriptive pamphlet from him. If he cannot furnish either, the manufacturers, Burke & James, Chicago, will gladly furnish the required information, and in addition, upon request will advise you where the tanks are on sale.



Fog

It seems that sufficient attention has not been given to the effect of general fog on the character of the general negative. By general fog is meant a deposit of silver produced all over the negative by the action of the developer alone, without any reference to the action of light—what the photographer denominates "chemical fog." It is noteworthy that all the modifications that are made in the developer with a view to compensate for under exposure, namely, increase in proportion of alkali, reduction in proportion of bromide, are modifications that tend to increase possibility of fog.

Reduction of relation of reducing agent, pyro or whatever it may be, has the same tendency, inasmuch as it necessitates prolongation of development. On the other hand the modifications which are supposed to compensate for over-exposure, namely, increase in the proportion of bromide and reduction in the proportion of alkali, are modifications which tend to reduce the amount of fog. It is probable that the influence of general fogging is to a large extent indirect and secondary; whilst the negative remains free from fog there is a tendency to continue development, thus increasing the absolute value of the densities and the ratio of the opacities. As soon, however, as much general fog begins to manifest itself development is stopped, whilst the absolute values of densities are low, and consequently the ratios of opacities are low also.

If you have two negatives each with precisely the same densities as the result of light action and development, if one has a layer of general fog whilst the other is free from it, the prints from these negatives will be decidedly different in appearance, although to the vision by transmitted light there seems little difference in the negatives.

Practical information given in the simplest language and in such unmistakable terms that even the wayfaring man, though a fool, need not err therein is the sine-qua-non of the photographic literature.

Of more importance to the ninety and nine is this method of conveying information, if only in short paragraphs, than whole pages of chemical and theoretical reasons why, when accompanied by symbols; algebraic formula and scientific terms. These are quite captivating, but they are not appreciated by the inquirer after practical information and they don't increase the circulation of the photographic magazine, and to the majority are an unknown tongue. A photographic journal ought to be three-fourth primary department, one-eighth scientific and the other eighth artistic, not counting the advertisers' schedules.

¶

A considerable amount of sky gives space and dignity to a landscape, and although it is true that the photographer has some excuse for curtailing it on account of its being generally a blank or white area on his picture, still in the majority of cases the picture carried out in proper proportion in sky space alone, would be better than to have the top of the work snubbed, as it were, and a great depth of arrogant (meaningless) distracting foreground. Where there is a great depth of foreground, skillful management is needed to fill it with interest and at the same time not to have one passage warring with another.

An artist by careful arrangement of his material can subordinate one passage and give prominence to another, but the photographer who generally has to take things as they are is deprived of this power of rearrangement.

If he places his horizon too high he has the meaningless foreground confronting him, or even if the foreground has some

complexity there is the tendency to a repetition of one passage over another which weakens the effect. We do hate to see trees cut off half way up the frame and be told when we protest that we have no imagination. We are inclined to think that even a blank sky would give us greater scope for exercise of imagination, at least it would not have the distracting element of unnaturalness

¶

The problem is constantly facing us whether prints may be considered permanent when subjected to only a moderate washing. There are numerous objections to prolonged washing, aside from the question of time consumed. An under, or perhaps we should say a moderately washed print, has generally a more vigorous and brilliant appearance than one subjected to water for hours to eliminate, as they say, the last traces of hypo from the paper or film.

The question of permanency, of course, is only to be settled by time, and it is impossible to predict from appearance or method of manipulation how long the image will remain in the pristine beauty. Brief washing is always desirable, and there is a temptation to have recourse to hypo eliminators to get rid of the undesirable tenant in the paper fibre, and new eliminators from time to time are advertised. But had we the voice of Stentor we would raise it in denunciation of any chemical means to get rid of the hypo. Hypo eliminators cannot take the place of washing if one wishes to preserve the beauty of the print or even to insure its permanency. While chemicals undoubtedly do eliminate hypo they do not add to the permanency of the print, but rather contribute to its speedy deterioration.

We say we wash our prints to get rid of the persistent hypo salts, but it is really not the hypo, which is a rather easily soluble salt, but the combination of the hypo with the silver, which is a stubborn chemical, and liable to form a very insoluble salt in connection with the hypo when exposed to light, and if suffered to remain would destroy the image. The so-styled eliminators tend to keep this very salt on the paper.

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The Relation of Exposure and Development

With Practical Examples by the Author

In Two Parts. Part 1.

By C. H. Claudy

IT is with great pleasure that I set myself the task of writing under the above title. It is not unusual, even with those who write because they must, to delight in being able to present a subject in a complete manner. Now, exposure and development have been written about before. The relation between them has been written about before, and probably will be again. The great trouble with all such expositions of the subject, no matter how well written, or with no matter what understanding of the subject, is that mere description fails utterly when so delicate a task comes to hand as attempting to make a reader see, via words only, just what is meant by the expressions "good negative," "poor negative," "thin but brilliant," "thick and flat," etc.

The ideal way to explain the subject would be with a set of negatives in one hand and a camera in the other. But, unfortunately, this is impossible in a magazine. The next best thing would be, if it were possible, for me to mail to each and every reader a dozen or so film negatives, properly tagged, so that each and every one, and more especially each and every beginner, could have in hand a set of standards of comparison by which he could be guided in his future work.

Again, this is impossible. But here I come to the point, and the head and front of my pleasure in writing and presenting these two papers. By the generosity of your editor and publisher I shall be able to show you in the April CAMERA—not, it is true, actual film negatives, but a very close approximation of them. Accompanying these papers will be found photographic reproductions, by the half-tone process, of actual negatives. These, again, will not be printed

upon the plain white paper of the body of the magazine, which would necessitate their being viewed by reflected light, of course—they are printed upon translucent paper, with the result that, if removed and held up to the light, they will almost perfectly approximate the original negatives from which the plates were made. I say almost, because no half-tone ever is quite as brilliant as the original; and, of course, the half-tone screen will not bear the close inspection that can be given to a negative without revealing grain, but the imitation is very close—so close, indeed, as to form a most excellent guide to exposure and development if used as standards of comparison.

It would be unfair to the progressive spirit of the editor and publishers if I did not call my readers' attention to the fact that such a method of illustration is expensive, and lifts the cost price of the April issue of *THE CAMERA* high above its usual and normal level. But the price to you and to the casual reader is not raised.

Sufficient this, then, for a beginning. Now for the method to be employed in using these and the way in which they were made.

It was essential that an evenness of conditions be maintained if any practical results were to be had; consequently, tank development was resorted to. A total of two dozen exposures was made, all upon the same subject—the United States Capitol at Washington. This building was selected after some thought. Its recommendations for this purpose were as follows:

It was large enough to allow a good distance between camera and subject, thus approximating average landscape conditions.

It was sufficiently contrasty to allow good range of gradations, and had a plentitude of high lights, the details of which are, after all, the test of development, just as shadow details are the test of exposure.

It was lighted from an angle of approximately forty-five degrees, about a general average of lightings, in so far as such an average is possible.

It is a building known the country over and readers are, therefore, not asked to adjust their mental vision to something new while applying a comparison to something with which they are familiar.

The exposures, in groups of six, were made as follows, and all the groups alike. The reason for this will be seen in a moment. The exposures were, at stop 128 U. S. one-twenty-fifth of a second, one-tenth of a second, one second, two seconds, five seconds and ten seconds. They range from decided underexposure to great overexposure, as, indeed, is easily seen mentally without looking at the reproductions, yet neither the under- nor the overexposure is so great as to destroy their value as standards of comparison. I do not know that the editor will reproduce all of the twenty-four exposures with these articles. Some of them are very similar to others, and one or two are so thin and so thick as to make it hard to get a reproduction at all.

I used a small stop in making these test exposures for two reasons. In the first place, I could get an easier range of over- and underexposure with the small stop than with the large stop. Had I, for instance, used a fast lens, working, say, at U. S. 2.9 (f 6.8), I would have had difficulty in underexposing on such

THE CAMERA Silver Medal
Competition No. 102

CHRISTMAS MORNING

F. E. BRONSON

Collinear Lens: f 5.6; cap exposure. Orthonon Plate; Angelo Sepia Paper
Double Mountings, in Brown.



THE CAMERA Bronze Medal
Competition No. 102

HELPING MOTHER

L. R. W. BEAVIS

Bright day in August, 4 p. m. : Eastman N. C. Film : Goerz Dagor III, stop $f/6.8$, 1-5th second ;
Machine developed, with Pyro, Printed on Eastman W. D. Platinum Paper, Kodak Salon Mount.

a subject with any ordinary shutter. Then, again, I could be more accurate, with my ten- and five- and two- and one-second exposures than I could with fiftieths and one-hundredths and two-hundredths given by the shutter. The second reason was that with a small stop I got fine definition and depth, which is essential when anything has to be reproduced sharply.

The four groups of six exposures each, each group like its neighbor, were developed as follows:

Group One received a normal development, in normal developer, at a normal temperature.

Group Two received a half development, in a normal solution, at a normal temperature.

Group Three received a quarter development, in a normal solution, at a normal temperature.

Group Four received double development, in a normal solution, at a normal temperature, or a single development, in a solution of double normal strength, at normal temperature, according to your point of view.

All these exposures were made on roll film. The rolls, of six exposures each, were developed in a developing tank holding forty-eight ounces of solution. By the words "normal development," "normal solution" and "normal temperature" are meant those conditions specified by the Eastman Kodak Company for use in their tank developer. Groups One, Two and Three were developed in a solution made according to the Eastman formula, which is as follows:

| | |
|------------------------|------------|
| Sodium sulphite | 90 grains. |
| Sodium carbonate | 60 grains. |
| Pyro | 30 grains. |
| Water | 48 ounces. |

The normal development with a temperature between 60 and 65 degrees F. is twenty minutes, which is what Group One received. Group Two had ten minutes in a similar solution, and Group Three five minutes. The solution for Group Four was made double strength and development carried on for twenty minutes. This was done, instead of normal solution for forty minutes, because the extent of the solution was limited; had I a tank holding ninety-six ounces of solution the latter plan would have been followed. But I wished to take no chances on not getting the full effect of development prolonged twice the proper time by the chemicals in the bath exhausting their efforts before time was up.

I am going into the conditions under which these films were made and developed thus fully because if the conditions are not thoroughly understood and appreciated the lessons to be learned from such a group of exposures will not be clear.

I also want to disclaim any intention of taking the attitude of a learned teacher instructing a class in beginners. I doubt very much if any beginner who reads this little series and looks at these reproductions will learn as much from them as I have—not that he isn't just as capable of learning, but because I did the work. And in consequence of that belief I would most earnestly advocate all of you, who may be interested, to first study these until you know them by heart

and then go and duplicate them on some subject of your own. It is not a waste of money nor of time nor of film or plates and a dollar or so spent in making all these multifarious exposures and developments will come back several times in knowledge gained if you will but go and do it.

But these articles are intended more for the beginner, who has difficulties yet to surmount in exposure and development, than for the advanced worker; and in just so much as you are willing to learn from such a means, in just so much am I a successful instructor, and in no greater a degree, even in my own mind, than in my success.

The four Groups are marked Group One, Two, Three and Four, and the exposures are marked 1, 2, 3, 4, 5 and 6, respectively, 1 being the smallest exposure—one-twenty-fifth of a second, and 6 being the heaviest exposure, ten seconds. It is important to recall the order of development in reading the account of what the results were—Group One, normal; Group Two, half normal; Group Three, quarter normal, and Group Four, twice normal.

It is also important to appreciate what were the degrees of over- and under-exposure. Both from practice, from similar pictures made before under similar conditions and from the result of the normal development on 3 of Group One (which, you will figure out, was the one-second exposure) I think it can be said that one second, at stop 128, was a normal exposure. Normal exposure means the exposure which gives the same degree and range of contrasts in the negative that were in the original, with the shadows clear and clean and the high-lights so they will print. This seems to be the result in these cases—the one-second exposure at 128 (equal to one-thirty-second of a second exposure at U. S. 4 or f 8, the usual largest opening of the rapid rectilinear lens) giving the best graduated negative and the one which gives the cleanest and brightest print. Of course, this is speaking technically; for it is a question of photographic technics we are discussing, and no room or allowance can here be made for the artist who could get a more "artistic picture" from one of the underexposed negatives.

If the one second be accepted as the normal exposure, then the twenty-fifth was twenty-five times under normal, and the ten seconds ten times over normal, and the other exposures over or under in a like degree.

If I can make a request of my readers it is that they, those interested I mean, thoroughly familiarize themselves with these particulars of exposure and development, so that when I come to talk about them one at a time you may follow me without bothering to turn back and look up what is which.

(To be concluded.)

Give me the man who can hold on when others let go; who pushes ahead when others turn back; who stiffens up when others weaken; who advances when others retreat; who knows no such word as 'can't' or 'give up'; and I will show you a man who will win in the end, no matter what opposes him, no matter what obstacles confront him."—*Orison Swett Marden.*

Balance

By H. R. POORE

THE question of balance simplifies itself upon the *nature of the work of art*, and the special reason why it holds forfeits over our heads and deals in enigmas is because we are apt to forget the particular kind of art we may be dealing with and therefore apply the wrong formula.

In formal decoration and architecture this question of balance soon settles itself. It is for the most part a matter of even weights or of matched equivalents.

The decorative artist will talk about measures and spots of attraction. The terms are applicable as well for the maker of pictures. The painter and photographer must first be designers.

Picture art may be decorative or architectural. It may be what is termed pictorial, with a trend in either of these directions. It may be purely pictorial without a trace of them.

In Ruben's picture of Castor and Pollux abducting the daughters of Leucippus one can get the impression of the artist conning over his spaces and fitting

the outline of the entire group to the limits of his canvas with the same effort toward balance as would the designer of a Turkish rug. I know of no better illustration of pictorial design filling an entire space in a single plane. The reaches of the background may be after considerations, an artistic device for giving space to what looks better thus than if placed against a blank wall or screen. An effort of balance is no less present here than in his formal design of the Crucifixion in the same gallery, where the doubling of objects on either side of the centre not only gives to it importance, but invests the composition with a symmetry and repose so favorable to the religious impression.

In Gérôme's "Œdipus" we feel part of the enigma to be, which of these two figures is the real subject. The eye shifts from one to the other in doubt. They represent two separated ideas in opposition. True, there are certain lines of connection—the embankment and the distant army—but it is a struggle for precedence; for the undersized Buonaparte looms larger in our thought than the overgrown Sphynx, and the sequence to our mind would be Napoleon and the Sphynx, though the importance in picture space is the reverse of this; therefore there is conflict.

NAPOLEON AND THE SPHYNX

GEROME

FISHING BOATS AT SCHAVENINGEN

THE COLCIFICTION

BERAUD

The composition of two items of equal importance is always more perplexing than of three or more. It is because pictorial balance has little to do with even weights upon her scales.

When, however, no doubt exists as to which is the more important mass, the clearer, smaller measure becomes the balancing weight on the principle of the steelyard. The fishing boats at Schaveningen, lined up as they are on one side of the picture, would look like an example of unbalance were it not for the distant isolated sail which dispels that impression. So, likewise, does the single figure serve as the balancing weight in Béraud's modern Crucifixion on the hills of Montmartre, or the figure of the Cardinal in Mr. Pettit's "Traitor."

These examples are sufficient to prove that unity is not dependent upon even balance, and in fact what looks like even balance may be two complete entities, sufficiently independent to stand alone, and that what appears like unbalance upon the principle of the steelyard is found *to be balance*

THE TRAITOR

PETTIT

These examples disprove a statement made by the writer of a recent excellent book on Composition as especially applied to architecture, who says, "In pictorial composition the different elements must balance in such a manner that the *average of interest* will fall in the middle of the frame."

We find it impossible to reconcile with such a statement the group of French bourgeois on Montmartre or the Dutch fishing smacks. In both of these certainly the average of interest falls to one side of the centre and leaves us still searching for essence of balance. The notion of balance upon the centre is undoubtedly correct, but the adjustment of measures on either side of this is not a question of "*interest*" but of placement, the *position* upon the chess-board of the picture containing the answer.

A study of the problem from this point of view develops the following:

Every picture is a collection of units or items.

Every unit has a given value.

The value of a unit depends on its attraction; its attraction varies as to its placement.

Every part of the picture space has some attraction.

A unit near the edge has more attraction than at the centre.

Space having no detail may possess attraction by gradation and by suggestion.

A unit of attraction in an otherwise empty space has more weight through isolation than the same when placed with other units.

Motion toward a space is frequently equivalent to weight of balance there.

A black unit or a white on black has more attraction than the same on gray.

The value of a black or white unit is proportioned to the size of space contrasting with it.

A unit in the foreground has less weight than one in the distance.

Two or more associated units may be reckoned as one, and their united centre is the point on which they balance with others.

Let us look for a moment at these simple statements which apply to picture-making from the scientific point of view.

That "every pictorial unit has a given value which depends on its attraction," and that "the attraction of the same object varies as to its placement." Suppose our problem was of the Sphinx and Napoleon and it was desirable to magnify one and sacrifice the other. Could not either one be made to play second by a different placement?

The workman, with clenched fists, casting forth his denunciation upon degenerate Paris does not occupy as much actual picture space as any one of the other figures, but he weighs more in the balance of parts than any figure in the composition, than even Christ himself, who is the real subject, and so also with the distant craft. Both of these items are not only unique, but are keys to the extreme spaces of the picture which lie beyond and therefore are doubly dignified.

Study the placement of the figures in the arrest of a traitor, and it will be found that the most important is he who occupies the smallest space, *the seated figure*, at the focus of two converging lines with face in full light and with a gesture which seems to command the situation.

Again, a unit at the edge having more attraction than at the centre: Suppose Napoleon were advanced half a dozen paces nearer the Sphinx. It would be observed at once that as a pictorial item he would lose importance, and that then it would be easy victory for the Sphinx; and, conversely, if he were nearer the edge he would attract more. The reason for this is that the edge of the picture is so improper a place for interest that we stare at the violation of that feeling.

"Space having no detail may possess attraction by gradation or suggestion." The sky in the Crucifixion, the wall and the distant reaches of the desert all play this part in the *perspective* balance, a point to be developed later.

"A unit of attraction in an otherwise empty space has more weight than though placed with other units." The boat and the single figure which now represents balance might be lost to all account if placed *with* the opposed group.

These examples are sufficient to prove that importance is due almost entirely to *placement*, and that certain definite principles stand waiting to mark our figures with the degree of their value when we wittingly or unwittingly consign

them to certain positions. We confront this truth, to our chagrin, when we see that our real subject has dropped into second or third place and some unimportant member has been vested with its honors.

It is here that a working knowledge of the fundamental forms aids us, as well as these postulates of balance.

The fact is established by the foregoing that balance, and therefore composition, is a matter of contrast in placement and but very little a matter of spacing. The distinction is important; in fact, on it hangs the essence of pictorial as opposed to decorative composition. In the former an insignificant space, which is the focus of radial lines or which is endowed with especial brilliancy, may prove the making or the destruction of the balance, whereas on the flat plane it means only that and no more *than that its size signifies*. It is not necessary to expand the thought to make it evident that simple space drawings in outline are useless for the artist who works in full-tone. You will never find an artist thinking out a picture in outline, but always over a number of tones with accents and gradations. The reason is that the spaces which the outline creates are not only useless, but misleading, for not until the picture has been brought to the last stage of detail do we encompass balance.

Carelessness

By Felix Raymer

AT THE present time there seems to be a deplorable tendency on the part of many otherwise good workmen to try and leave the impression that there is not only no necessity for taking pains in making good pictures, but that it is even better to be careless than to be careful. We often hear a man whom we have considered a very fine operator say, "All I do is to let the subject alone; she or he will take a good pose," or he will say, "I never take any trouble in lighting my subject," and, with a wise shake of his head and an indifferent wave of his hand, continue, "there is no need to bother about screens or curtains, and I never pay any attention to reflections, etc." Such assertions often lead the credulous operator into mistakes that take many months of hard work and reasoning from a more painstaking workman to get him out of. If there is any one thing for which I have been criticized more extensively than another it is my being such a "stickler" for small things or the details of work. One great source of amusement to some of my friends is my hobby for insisting upon one very *small detail* in making negatives, and that is the securing of what I call the *catch light* in both eyes. This is not a new idea, nor am I the originator of it, for it was known to old operators years ago and to *artists* hundreds of years ago. In later years this carelessness on the part of operators has caused them to either ignore it, or perhaps, having acquired their knowledge from some other careless operator, they never have been instructed in the part it plays in lighting. It is said that "the eye is the window of the soul." It is equally true that it is the key to the making of portraits. Any source of light used in making the negative is reflected in the eye in what is known as the *catch light*. If it is a skylight, the slope of that light can be seen in the catch light if one will get close to the subject and examine carefully. If the source of light is one of the lamps now on the market, the lamp will show in the catch light. If it is a flash negative, the shape of the flash shows in the catch light. If the subject is not facing the light enough to get the catch light in the shadow eye, every high-light in the face is thrown too far to the rear of the head, resulting in hollow cheeks and a hollow eye on the shadow side, with the outline of the head too sharply relieved against the background. I can demonstrate to the satisfaction of any one that the success or failure of the picture depends entirely upon the catch light.

But other things arise in our everyday work over which many operators appear to be careless. I say *appear*, for, as a matter of fact, it is simply a familiarity with this work that makes them often appear careless. They perhaps had spent years in being careful before they reached the point where they could *appear* careless; but the man who is constantly looking for "a change" in his work does not stop to discriminate between actual carelessness and familiarity with one's work. Because the crack operator can throw his background about and toss a head screen to one side, or kick a reflector out of the room and yank a curtain off the light and say, "I never have any use for such

things," the vacillating operator jumps to the conclusion that a careful arrangement of light and shade is all nonsense, and all one has to do is to jam the subject down and fire away and whatever he hits is true ART, spelled with capitals. Who ever heard of an *artist* working in any such slapdash manner?

Another case in point is the *posing* of one's subject. We often hear operators of national reputation say, "I never pose my subjects." To the naturally careless man such a statement sounds like a benediction from the Almighty, for he now has some excuse for being careless. But the operator who says he never poses his subjects, misleads his hearers from ignorance either on his part or theirs. I will not say he does so intentionally, but, as an actual fact, he *does pose* them. He has by years of study and practice arrived at a stage where, by a thorough understanding of nature, he knows a good pose when his subject assumes it, and also knows a bad one. When the subject has fallen into an easy pose—and *any* subject is bound to do so at some time—he is ready with his gun and fires; to the onlooker he has not apparently done a thing towards posing the subject. Again, this operator "who never poses his subjects" will touch a lock of hair, move an arm, change a fold of the gown, and by so doing secure an easier attitude, but he will say he did not pose her. Certainly not, but he saw in his mind's eye a pose that would be good if that lock, or arm, or fold of the dress was changed. In a moment it was done, and his careless pupil stands in open-mouthed astonishment at the ease of it and at once begins to practice these careless habits, with the result that his work *shows carelessness*, whilst that of his instructor shows careful *thought*. The instructor had used his brain for years, had *thought* out pleasing poses, had studied them in his mind, whilst the pupil either had no brains to use nor mind to think with, or else was too careless to think. The pupil should never accept all he hears until "he is shown" or has done a little thinking for himself. Any thinking man *knows* that the workman who considers every point and condition will secure better work than the one who never considers anything, but trusts to luck. Another piece of carelessness some are apparently guilty of, and this applies more particularly to printers in the mixing of formulas. The crack printer says, "I just dump in some gold, soda, salt and water, and let 'her go Gallagher.'" The crack printer has used his "think pan" for years, and, having made up so many gold baths and having used so much of the particular paper he advocates, is fully acquainted with the fine details, and can offhand get pleasing results. But when the careless man tries it he begins very shortly to storm the factory with requests for a demonstrator to help him out of his troubles. Now, who is to blame for this condition? As I see it, both the instructor and pupil are to blame. The instructor, though wise enough to understand much of human nature and thus secure natural results with the least amount of effort, is not wise enough to understand the human nature of a careless man, and not doing so fails to realize the tendency of the careless one to grasp at every straw that promises any relief from work or painstaking effort. The pupil is to blame for allowing himself to be influenced in any such fashion. His brain probably weighs as much as that of his instructor, but he doesn't use it.



Honorable Mention
Competition No. 102

ALBERT HILLER



I use a small photo to illustrate this idea of apparent carelessness. The subject walked under the light fastening her glove, and whilst 'tis true I did not take hold of her and twist her body into a spiral stairway, and, in fact, did not even ask her to change her position in the least, still in my mind's eye *I posed her*, for I knew the pose that would appeal to one from a natural point of view, and I leave it to my readers as to whether they have ever seen a lady in this position.



About Chemicals

By Chas. S. Taylor

TO EXPECT any considerable degree of success when using different formula combinations one must be acquainted with their properties. The film, with its automatic development, captivates the fancy of the photographic novice, and he is apt to lose sight of the importance of the brain behind the camera. That a knowledge of chemicals and their reactions is desired is perhaps better appreciated after one has made appreciable progress beyond the "button-pressing" stage.

The first essential component of a rightly-made solution is the purity of the water, and although this is extremely important, it is rarely given the same amount of care that one uses in weighing the chemicals, or in testing the speed of the toning bath. Yet upon the purity of the water depends often in a great degree the entire success of the solution. More than one unexplainable failure of a solution to produce an expected good result can be traced to the impurity of the tap water. The greatest cause of impurity will usually exist in the large quantity of carbonic acid gas, chloride of sodium (salt), lime, iron and vegetable matter. Distilled water can be had at most drug stores, and, as the cost is nominal, it should be used in preparing all stock solutions. Rain water is the purest obtained from nature direct, and if collected after the roof has been cleaned by the shower, and filtered, will answer nicely. Boiled water, cooled, then filtered, is also good. The ordinary water supply will answer for washing plates and prints.

We now come to the chemicals, and in giving a list of those most generally used in photography I have arranged them in alphabetical order, that the reader may refer to them with convenience and despatch.

Ammonia.—The ammonia used in photography (.880) is the strongest liquor ammonia, usually sold by druggists as 30 per cent.; that is, it contains about 30 per cent. of the gas, NH_3 . This solution should be handled with great care, the vapor irritating the eyes, nose and throat. It is seldom used in America, and is being rapidly discarded in England, where it is used as an accelerator. Owing to the great loss of strength when kept in a strong solution, equal amounts of water should be added, doubling the amount called for in the formulæ. Rubber stoppers must be used.

Ammonium Carbonate.—This is a mixture of the different salts of ammonia, and called by the drug and chemical trade "rock" or "lump" ammonia. This

strong alkali is soluble in 3.3 parts of cold and in .833 parts of boiling water; insoluble in alcohol. Often used with both pyro and hydroquinone to secure a warm tone on lantern-slides and transparencies.

Alums.—These compounds are composed of aluminum sulphate with potassium sulphates, soda and ammonia. The three kinds are used for the same purpose in photography, all dissolving up to 12 per cent. solution in cold water; in hot water they are very soluble. Used alone to harden the gelatine film (10 per cent. solution), or in connection with the fixing bath. (See HYPO.)

Chrome Alum.—Like common alum, but in place of aluminum it contains chromium. This hardens the film better than the ordinary alum, a 10 per cent. solution being of the correct strength. The following formula will remove all trace of hypo left in the plate after washing: Chrome alum, 1 ounce; citric acid, $\frac{1}{2}$ ounce; water, 20 ounces.

Acetic Acid.—The photographic formula calls for *Glacial Acetic Acid*, if not contrarily stated. This is a clear liquid of a pungent odor. The acetic acid of commerce is a little less than one-half as strong as the glacial, while the diluted acid contains hardly 5 per cent. of the actual acid. The glacial acetic is therefore seven times as strong as the latter.

Acetate Sodium.—Acetic acid neutralized with caustic soda forms the salt of sodium acetate, used for toning.

Ammonium Persulphate.—One of the best reducing agents used in photography. Formula: 15 grains to the ounce of water.

Alcohol.—Methylated spirits, wood alcohol and grain alcohol are used as solvents for gases. These are all antiseptics. Boric acid, oil of cloves and salicylic acid are antiseptics of more feeble action. (See MOUNTANTS.)

Backing Compounds.—Caramel is much used for backing plates, and, as it is much superior to asphaltum, I give a formula which has given me great satisfaction. It dries rapidly and is easily removed with a damp cloth. Caramel, 1 part; thick solution gum arabic, 1 part; burnt sienna earth, 2 parts; wood alcohol, 2 parts.

Bromides.—Potassium bromide should be pure. It dissolves in 1.55 parts cold and in 1 part hot water. Acts as a restrainer in development.

Bromide, Ammonium.—This salt absorbs water readily, and bottles should be well stoppered. Used as a restrainer, but if used with caustic soda or potash it produces fog. Will give warm tones when used with hydroquinone.

Calcium Chloride.—Useful to absorb moisture in tubes of platinum papers, carbon tissues, etc. When lumps are moist it should be put in the stove oven until perfectly dry.

Citric Acid.—This acid is obtained from lemons, and is used chiefly for a preservative in pyro solutions in proportion of 40 grains to the ounce of pyro, adding water to make 10 ounces. One part is soluble in 0.75 parts cold and in 0.5 parts hot water. *Ammonium Citrate* is made by neutralizing citric acid with strong ammonia. *Sodium Citrate* is made in a like manner with sodium carbonate, as is also *Potassium Citrate*, the latter using the potassium salt.

Copper Sulphate.—This comes in the form of blue crystals, and is used in the development of wet collodion plates.

Copper Chloride is made by adding salt to copper sulphate. Used in Spiller's reducer.

Copper Bromide.—Made by mixing copper sulphate with potassium bromide. Used as an intensifier, but not generally recommended.

Copper Ferricyanide.—Not soluble in water, but dissolves in a solution of potassium citrate. This solution forms Ferguson's toner for bromide papers.

Combustants.—Magnesium is a white metal, and used like aluminum to make flash compounds of various kinds. In manufacture the above metals are treated with potassium perchlorate and potassium nitrate. As great care is necessary in their preparation, owing to their explosive nature, the bought forms are the best.

Color Removers.—A 10 per cent. solution of soda carbonate will remove some stains, especially those of pyro developer. Soda sulphite, if added to the developing solutions, prevents this stain or discoloration.

Gold.—There are many preparations of gold, gold sodium chloride, gold potassium chloride, etc., but they are all useful, providing they contain in the

15-grain vial the necessary 7 grains of pure gold, usually guaranteed by the makers.

Gallic Acid.—If pure it comes in white or brownish-gray needle crystals. Used principally in black-line process.

Hypo Removers.—These salts are oxidizing agents and convert the hypo into other substances. The best is perhaps potassium percarbonate, which is upon the market under various names.

Hydrochloric Acid.—Well known as muriatic acid, and used as a clearing solution for platinum prints. Only the clear, colorless acid (C. P.) should be used; the yellow acid is useless for photograph use.

Hydrofluoric Acid.—It somewhat resembles hydrochloric acid, and is corrosive to the skin, often making sores. The fumes are harmful, and it should be handled out of doors. Used for stripping plates and for etching glass.

Irons.—Ferrous sulphate, or protosulphate, is known as green vitriol, in form

of green crystals. When dissolving for developers a little acid should be added (sulphuric acid 3 drops per ounce).

Ferrous Oxalate.—This is a yellow powder insoluble in water, but dissolving in potassium oxalate, forming the base of the developer of this name.

Ferrous Chloride.—Comes in small green crystals, absorbing water rapidly. Used in blue print process and as a reducer (2 per cent. solution).

Ferric Ammonium Citrate.—Comes in both brown and green varieties, and as they are both sensitive to the light and readily take up moisture, they should be stored in well-stoppered bottles in a dark place. The brown variety can be obtained everywhere, though the green gives a quicker printing image. This formula has given me better results than any other I ever used, and, having never seen it in print, will offer it for what it is worth. Ammonium citrate iron (ferric ammonium citrate), 100 grains; potassium ferricyanide, 64 grains; water, 2 ounces.

Lead Salts.—Lead acetate is chiefly used in combined toning baths. Lead acetate (or nitrate), 1 part; hypo, 20 parts; water, 100 parts; 1 per cent. gold chloride solution, 50 parts.

Lead Nitrate.—Used like the acetate and in intensification. Lead nitrate, 20 grains; potassium ferricyanide, 30 grains; water, 1 ounce. This bleaches the film, blackening in ammonium sulphide.

Magnesium Silicate.—Called *Talc* or *French Chalk*. Useful to polish glass.

Mercury Compounds.—Mercuric chloride, known as perchloride and bichloride of mercury. Not soluble in cold, but dissolving in hot water, which should be used in making solutions. Chiefly used in intensification, reduction and in toning.

Mercurous Chloride.—Known as calomel. Silver and potassium cyanide changes it into Monckhoven's intensifier.

Mercuric Iodides.—Comes in a reddish-yellow substance, insoluble in water. Dissolves in solution of potassium iodide and in solution of soda sulphite. Chiefly known as making Lumière's intensifier. Mercuric iodide, 45 grains; anhydrous soda sulphite, 440 grains; water, 10 ounces. Used after negative has been fixed and washed. Operation is finished by re-developing.

Mounting Compounds.—Dextrine comes in a yellow powder, and, unlike some mountants, does not strike through the paper. Mix with water for use.

Gum Arabic.—This should come in white, pure lumps. 2 parts water to 1 part of gum gives the proper thickness for mounting purposes.

Gelatine.—This constituent of glue makes a powerful adhesive. Gelatine, 2 parts, soaked in 6 parts cold water; then heat until dissolved; then add 1 part chloral and a drop or two of some alkali solution, which last operation makes it neutral.

Nitric Acid.—A colorless liquid of great strength. It is a powerful poison, and must be handled with care. Used to preserve pyro solutions (10 drops acid in 6 ounces of water added to 1 ounce pyro).

Oxalic Acid.—Used as a preservative for pyro solutions (10 grains to 1 ounce of pyro) and in a 12 per cent. solution for removing stains in bromide printing.

Potassium Iodide.—This is an extremely soluble chemical, but in solution must be kept from the light. Useful in intensification and reduction. (See MERCURIC IODIDE.)

Platinum Chloroplatinite is most suitable of the platinum salts for toning collodion prints and for making platinum papers.

Potassium Sulphide.—Known as liver of sulphur. Used in lead intensification.

Sodium Chloroplatinite is employed for the same purpose, and is said to make more brilliantly clear prints. There are many preparations of a concentrated solution of platinum upon the market, Monarch and Aristo brands being well known.

Phosphoric Acid.—A syrup-like liquid, used mostly in platinum toning bath.

Potassium Carbonate.—This salt comes in anhydrous and crystal form. Both are used in photography, the anhydrous being more reliable, as the crystals are of an unstable composition. Used by some workers in place of sodium carbonate.

Potassium Oxalate.—Known as neutral oxalate potash, and when pure comes in colorless crystals, the solution of which is neutral. If it turns red litmus paper blue the salt contains too much alkali for use.

Potassium Metabisulphite.—Known also as pyrosulphite. This salt is acid, and when used instead of soda sulphite the alkali must be increased. Five grains caustic potash to every grain of potassium metabisulphite.

Potassium Bichromate.—These red crystals are much used. Fogged plates may be partly restored to their sensitiveness by soaking in this solution. When mixed with gum it forms the coating used in gum-printing. Also much used in solution for ray filters and in making a light for developing.

Potassium Cyanide.—Sold in white lumps. Both the vapor and the chemical are extremely poisonous. Chiefly used in the iodine-cyanide reducer (4 per cent. solution of potassium cyanide, 5 drops of 1 per cent. solution of iodine in alcohol).

Potassium Ferrocyanide.—Known as yellow prussiate potash, coming in yellow crystals. This chemical keeps well, either open or in bottles. It is neutral and not named as a poison. Mostly used in Pollet's blue-process. Added to hydroquinone developer it gives brilliant negatives.

Potassium Ferricyanide.—Known as red prussiate potash, coming in red crystals. Both solid and solutions alter in the light, and they should be kept in a dark place. Used in the blue-print process and in Farmer's reducer.

Potash, Caustic.—Otherwise known as potassium hydrate. Comes in form of pure white sticks. It is deliquescent, and must be kept in tightly-stoppered bottles.

Schlippe's Salt.—Comes in soluble crystals. Used after mercury intensifier.

Sulphuric Acid.—A heavy, oily appearing liquid. This acid must be added to water drop by drop, never direct to solutions or in reverse order. One minim of strong acid equals 2 grains by weight.

Sulphurous Acid.—Sometimes used in place of sodium sulphite, but as it loses its strength rapidly is not recommended.

Sodium Sulphite.—Much used as a preservative and “anti-stain” in developing solutions. Comes in crystals, anhydrous and acid forms.

Acetone Sulphite.—Composed of anhydrous sodium sulphite and acetone. Used as a preservative, and claimed that 15 parts of acetonesulphite will replace 100 parts of sodium sulphite.

Sodium Tribasic Phosphate.—Recommended by Lumière for the alkali in developers, giving a stronger image. Practically it is of no advantage.

Sodium Thiosulphate or Hypo.—Should be in clear crystals that dissolve free; of a milky color. Acids and alums precipitate sulphur from hypo. A bath made of the acid salt-metabisulphite is the most satisfactory. Hypo, 8 ounces; potassium metabisulphite, 1 ounce; water, 40 ounces.

Silver Nitrate.—This is a heavy white crystal form, darkening when exposed to the light. Only distilled water should be used for solution, ordinary tap water precipitating a white substance known as chloride of silver.

Silver Ammonio-Nitrate.—Formed by adding ammonia to silver nitrate solution. Used in sensitizing for plain paper printing.

Tannic Acid.—Used for toning blue-prints and for hardening the gelatine film. Owing to its staining properties it is but seldom used.

Tartaric Acid.—Used with iron printing sensitizers, notably in the Kallitype process. The most important tartrate is *Rochelle Salt*, used with silver nitrate in printing out papers and as a developer to secure sepia tints in Kallitype process.

Uranium Nitrate.—Comes in yellowish crystals and soluble in water and alcohol.

Uranium Acetate.—Comes in same form as the nitrate, and is soluble in both water and alcohol. Both chemicals should be kept in tightly-corked bottles in a dark place. Used in making red (Bartolozzi) prints, in blue-print coating and for bromide toning and intensification.

\$ \$ DOLLARS \$ \$

By John L. Hopper



ALL OF US, I suppose, take up photography with the thought that it is going to be a great expense; to most of us it is. There would be more amateur photographers if they only knew enough to get busy and see how readily they could earn enough to support their photographic pleasures.

How many times during the year do we pick up photographic magazines and see under the competition heading, "No announcement for this month as there were not entries enough to warrant making awards"? There is an opening at once. Nearly every photographic magazine holds competitions (I think that there are two or three exceptions), and surely we should never give the editor a chance to put such an announcement in his magazine if we were on to our jobs.

Some periodicals of the semi-newspaper style have started the habit of offering weekly prizes to amateur photographers sending in the best *news* pictures. In this way they get news photographs more quickly and cheaply than if they have to send a special reporter to the scene. Be prompt in sending in your pictures. Develop your negatives at once, and if necessary make a print from the wet negative on glossy developing paper (which should be kept on hand), and if necessary mail by special delivery. This is one of the best paying branches of photography, and also one of the most fascinating. The magazines never pay less than \$1 per print, and often as high as \$10 or more.

The country magazines require and are offering prizes for country pictures, besides paying well for all photographs used not winning a prize. Of course, the city photographer does not have the chance at this work that his country cousin does, but he has a better show at news work.

Again, the post card manufacturer is another resort for money making by photography. Write to the postal card manufacturer (get his name from his cards), telling him what you have and asking him if you can submit prints. I know that dealers are continually crying for something *new*, and often the amateur has something of which the professional never dreamed. Besides all these ways, every amateur can build up a trade around home, taking pictures of well-known places and printing them on post cards. If it is the country chap, he is in luck, for the summer boarders are ever ready to buy.

In entering pictures for reproduction in magazines or on post cards, make your pictures on glossy P. O. P. wherever possible, and if not, on glossy developing paper. The sun paper is better, as it gives greater detail than the developing paper. This is necessary, as a great deal of detail is lost in reproducing. The glossy developing paper can sometimes be used to an advantage, as often a negative is so very thin that it is impossible to get a satisfactory sun print from it, and the slower grade of developing paper will do this if any paper will.

Do not be discouraged if your first attempts with the magazines are not successful. Study the magazines thoroughly until you see what they want, and I'll guarantee that there will be a bigger balance shown in your photographic cash book at the end of the year.

Is Photographic Permanence Desirable?



THE above question should be one of considerable importance to every one who practices photography whether as a professional or as an amateur. The subject is too frequently neglected by both. It must be admitted that a very large number of photographs are now produced daily that, for the credit of the art, it is by no means desirable that they should prove too stable. But there are others in which permanency is a most important consideration—family portraits, to wit—for life is uncertain. More photographs are, undoubtedly, now being made daily than at any previous time in the history of photography, and there is little question that a larger proportion of them will prove fugitive in the near future than has ever been the case before. With all the knowledge gained, both in theory and practice, during the past forty years and more, is this to the credit of photography and photographers?

The carbon and platinotype processes both yield pictures of undoubted permanence. But need silver prints be so unstable as many persons seem to imagine? We say, no. There are thousands of silver prints still in existence that were made forty, and upward, years ago, that up to the present show no signs of lack of stability. If these could be produced forty years ago, why, with our extended knowledge of the chemistry of the subject, cannot similar results be done now? It may, *en passant*, be asked how long should a silver print last. Some seem to be of opinion that if it exists for three or four years, that is all that should be expected of it, and it is to be regretted, for the credit of photography, that very many do not last for anything like that time, some even show a marked change in as many months. Indeed, we have seen examples of silver prints in an exhibition that, though good at first, showed a decided change before the exhibition had closed.

During the past few years every effort has been made by manufacturers to simplify photography, in reducing the trouble in its working to a minimum. But it is interesting to inquire if this has not, to an extent, been done at the expense of permanency of the results obtained by those who do not fully recognize the principles involved or, if understood, are neglected.

The old prints that have so well withstood the test of time—the only true test of permanency—were made on plain paper, or on albumenized paper, which the user had to sensitize himself. These papers contained nothing but chloride of silver, with a considerable quantity of free nitrate of silver, plus, in the case of the albumenized, a trace of an organic compound of silver termed “albumenate of silver.” The paper was in a neutral state, and had to be used the day, or day after, it was sensitized. Later on, ready sensitized albumen paper was introduced. This contained an organic acid as a preservative, hence the paper was acid, instead of being neutral as previously. Then gelatine papers, now called P. O. P.s, were introduced. These, in addition to the gelatine, contain chloride of silver, an organic salt of silver, free acid, and only a small proportion of free nitrate of silver. These papers yield very pleasing results, are easy to manipulate, are well suited to the weak negatives of the present day, and,

what is more, have good keeping qualities. Hence they are very convenient to employ, as well as being economical. For these reasons they have almost entirely ousted the older papers from the field. Where albumen papers are now employed they are usually bought ready sensitized. Indeed, we much doubt if the unsensitized albumen paper is now stocked by any but the larger dealers.

As a further trouble saver, the combined toning and fixing bath was introduced for "P. O. P.s," and became largely used by amateurs, who do not like the trouble of toning and fixing their prints separately. To the use of this bath may be attributed a very large proportion of the fading prints of to-day. Although paper makers, as a rule, give a formula for this bath, they, most of them, discourage its use; yet for all that it is largely used. There is not so much harm in the combined bath if the tones are really obtained by a deposition of gold; but too often the bath is repeatedly used long after its gold has been exhausted, as then it will still continue to yield good tones, but they are produced by sulphur toning, the stability of which is more than doubtful. Furthermore, with the

combined bath the desired tones are frequently obtained long before the prints are sufficiently fixed, with the result that within a very brief period they develop yellow stains. The latest thing in the way of saving trouble in working is the introduction of the so-called "self-toning papers." These have been too short a time on the market for one to pass any positive opinion as to the stability of the prints made upon them.

One naturally likes to obtain one's results with as little trouble as possible; but, at the same time, is it desirable that this should be done at the expense of their stability? If one goes to the trouble to produce a negative that will yield "a thing of beauty," it is desirable that it should be also "a joy forever," instead of only a fleeting one, even if it should involve a little extra trouble in its production.

When commencing this article, we had intended to point out the difference in the conditions of working when the stable prints of forty years ago were made and those prevailing at the present time—and they were widely different—but space will not permit. We may, however, recur to the subject at some future time.
—*British Journal of Photography*.



AN INDEPENDENT MONTHLY MAGAZINE DEVOTED TO THE
ADVANCEMENT OF PHOTOGRAPHY

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MARCH, 1907

While we believe that photography, though tending to relax the industry of inferior painters, will stimulate the exertions of the best, for much—very much—may be learned from it, if used as a method of becoming acquainted with the beauties, especially the evanescent beauties, of nature, which elude the most vigilant pencil. Not the least of the services photography has rendered art is the facility with which it records such subjects of art as would require only the most skilful and tedious labor to represent with graver or brush. We are well aware that the delight in delicacy of rendering by presentation of detail, is fast giving place to a broad slap-and-dash execution, but still there are a few subjects which demand delicacy of treatment.

At a recent sale we purchased several fine etchings of celebrated cathedrals of Europe at a price many times above that asked for carbon photographs of the same and of the same dimension, and yet we felt we had secured a bargain. On comparison of the expensive etchings with the comparatively cheap photographs (unsigned) we were forcibly struck with the superiority of the

latter, not only as a means of technical study to the architect, but also on account of their real æsthetic worth; not alone in detail, for as we studied further, we perceived, or rather the truth grew upon us, how inadequate the pencil is in giving the simplicity and breadth, the inexhaustible modulation of surface and symmetry of outline, as well as subordination of the elaborate ornament to the whole conception. For where the etchings attempt to give mass and breadth it is only with great sacrifice of detail (not subordination).

In the photographs while detail is shown it is not obtrusive and even in the deepest shadows under projecting cornices, it is not a blank illuminous mass of black tangled lines, as in the etchings. However, you must not forget that these carbon prints were certainly made by one possessed with the skill and feeling of a painter.

We have framed and hung up the etchings of the cathedrals and the carbon prints of the same. When we neglect to tell anyone which is the photograph and which is the work of art, the visitor invariably remarks about the superiority in artistic worth of the carbon photographs, but if incautiously or purposely we indicate which is which, the etchings go away up in the scale of estimation.

People are so afraid of admiring amiss. It would not do to be found lacking in judgment and artistic perception if one should happen to admire something not generally considered admirable. The critic is apt to think more about himself than the picture, and besides it is always so safe to condemn a photograph.



Why do we see so seldom put in practice one or other photographic methods capable of determining luminous intensity, despite that there are several excellent photo meters or exposure meters, as they are called, accessible. At every moment the determination of degree of luminosity is of necessity when one is in doubt as to the exposure.

Under trees, for example, in a forest, it is exceedingly difficult to judge, and frequently one errs on the side of overexposure because the eye is deceived by an appearance of gloom which photometrically is not as great as supposed.

Under trees, also, it must be remembered that the intensity of the shadows varies according as the trees are more or less leafy, and as the sun is more or less high in the horizon.

In such cases we see amateurs, guided by chance alone, when they might profitably employ an exposure metre, and we also see how many plates are wasted by this guess method of working.

If they were to use a rationally constructed photometer, giving the luminous intensity at every moment by means of a simple fragment of sensitized paper, they would avoid absolutely all causes of error arising from faulty exposures. What surprises us is that so much attention should be paid to developers and so little to time exposure, while the latter plays the most important part in out-door photography. All will go well if you expose well. We cannot, therefore, too strongly advise the beginner to convince himself of the importance of luminous intensity, and after having done so in a short time, he will acquire an instinct which will allow him afterwards to intuitively judge the light with a greater degree of approximation. For intuition is really an unconscious use of previous experience. Until this intuitive judgment is attained, let the beginner not blush to be caught using an exposure metre by someone who may criticize what is really a valuable adjunct in training the photographic judgment.



So great has been the development of art in photography in recent years that it is now hardly possible for any one class of reading matter to appeal to all who may be interested in the art. When we think of the large number of unselfish experimentalists and students whose only aim is to perfect the different processes or to discover new ones, as well as those who may be compelled to make use of photography in an entirely mechanical manner, we can well imagine that they would deem any effort to improve the good taste of the craft incongruous indeed so far as they are concerned.

There is, for instance, a widespread defect in many of the more ambitious of modern portraits, which as an incongruity we cannot pass by in silence. This is underexposure and large patches of black shadow

void of detail in the drapery. It is becoming a rare thing to see good body in the shadows of darkly clothed sitters together with absence of solarization and flatness of the face. That there are honorable exceptions to this assertion goes without saying, but we are speaking of average work.

Careful lighting and choice of plates and chemicals are just as important in these times as they were in the days of collodion, particularly for portrait subjects.

Another fault in portraiture which has recently made its appearance is an unskilful and inartistic use of the top-light, which creates overaction on the hair, particularly when the sitter is a blonde, so that frequently the proper outline is lost against the background. Portraits of ladies whose hair is bound with a Grecian fillet, if posed before a light ground, show emphatically this defect.

Another defect (a sort of following after the Japanese panel) is the trimming of the print with so little margin that the head seems cramped; or when a profile is presented, allowing very little space in front and too much in the rear.



We have all come to find out that there is such a thing as having a picture too sharp. We have been told time out of mind that nothing is more offensive to an artistic eye (and we all aspire to be artistic) than a hard-lined, seared, wrinkled visage, rendered with a more than pre-Raphaelite faithfulness as though it were an Egyptian colossus. Various modes have had recourse to of getting rid of this offensive definiteness of rendering, such as interposing some medium between lens and sitter or putting image out of focus, etc. Putting out of focus, unfortunately, is a very indefinite suggestion. What shall we put out of focus? If the tip of the nose is in focus the ears will be out, and vice versa, and so on whatever plane we may select, some other one is bound to cry out in protest.

It is true a judicious artist will avoid giving especial sharpness to wrinkles, etc., by throwing the focus a little back or forward, as circumstances may suggest, so as to avoid crisp definition of the skin texture.

All questions relating to technical matters, processes, working instructions, etc., are referred to competent experts in the particular subject referred to, and the utmost is done to insure reliable and practical answers being given.

Correspondents are requested to first state their case and then number each question; they should also write on one side only of the paper, and enclose correct name and address—not necessarily for publication. No attention will be paid to anonymous communications or those only signed with initials.

We do our best in all cases to publish the replies in our next issue following the receipt of the inquiry, but cannot absolutely guarantee this.

All inquiries should be addressed to THE CAMERA, 123 South Eleventh Street, Philadelphia.

No questions answered by post. No prints criticised.

COPPER INTENSIFIER.—I have some extremely thin negatives that do not yield to the ordinary intensifiers, and I have been recommended to try copper intensification. Will you give me the data necessary?—I. N. G.

- A. Copper Sulphate 2¼ ozs.
Water 10 ozs.
B. Potassium Bromide .. 2¼ ozs.
Water to 10 ozs.

A and B are separately made up with hot water, mixed and allowed to cool. The negative is bleached in the mixture and washed for a minute or two. It is then blackened in:

- Silver Nitrate 45 grs.
Water (distilled) 1 oz.

For still greater density, the negative is well washed from silver and an ordinary developer applied.

If too dense, after the silver, it can be placed in weak hypo solution (about 10 grs. per oz.) or weak potassium cyanide (about 2 grs. per oz.).

PRINTING ON CANVAS.—Will you please furnish data for printing upon canvas and give a simple formula.—F. W.

The following is Winter's process of photographing on canvas. The sensitive substance is a mixture of iodide of silver and bromide of silver, or bromide of silver made by a decomposition of the iodide and bromide salt with nitrate of silver. The canvas must be washed in hot water and well manipulated, then rinsed with cold

water and hung up to dry. To sensitize it make the following solutions:

1. Bromide of potassium..... 4 parts
Bromide of cadmium..... 1 part
Water200 parts
2. Bromide of potassium..... 3 parts
Iodide of potassium..... 1 part
Bromide of cadmium..... 1 part
Water240 parts

The canvas may be prepared in either of the two solutions, submerging it entirely and keeping it under by means of a glass rod. When dry it is sensitized with

- Nitrate of silver..... 4 parts
Citric and nitric acid..... 1 part
Water410 parts

After again drying it may be exposed under a negative, or in the solar camera, in such a manner as to place the condenser exactly opposite the sun or artificial light, when the enlarging camera may be placed horizontally. Electric or magnesium light answers very well, as the surface is very sensitive. Expose till the outlines of the picture are faintly visible. Develop with

- Pyrogalllic acid..... 10 parts
Citric acid..... 45 parts
Water410 parts

The developer may be slightly warmed. The canvas should remain in the developer for at least ten minutes. The toning and fixing are effected in the usual way. The pictures may be brightened by coating over with a wax solution (1 part white wax to 5 parts turpentine). When stretched on a frame, colors may readily be worked with a brush.

HOLDING BACK PRINTING.—Many of my portrait negatives are rather hard to get good prints from owing to my lack of knowledge in making the proper lightings. Portions print too black, yet I had a professional make some prints from one of these negatives and he delivered me prints without showing this extreme contrast. He would not tell me how he did it, stating that it was a secret process. Could you tell me how I may accomplish this result?—M. B. S.

Probably the result was obtained by the use of ultramarine paint (oil is best). Place a very small portion on the glass side of the negative, and with the finger daub it lightly over that portion of the negative that you wish to restrain in printing. A little practice will enable you to secure the result that you are after, and after the color has dried it can remain on the negative indefinitely or may be removed with a rag dampened in ammonia.

The Twenty-seventh Annual Convention of the Photographers' Association of America will be held August 6, 7, 8 and 9 in the Steele Educational Building, Dayton, Ohio.

Taylor, Taylor & Hobson, 1135 Broadway, New York, favor us with a copy of the new catalogue of Cooke lenses. The little book is full of good information, which you can have free upon request. Also ask for a copy of "The Principles of a Lens' Action"—this will give you a lens talk that will be easily understood and help you over many difficulties.

George Murphy, Inc., 57 E. 9th St., New York, announce that an Aristo School of Photography will be held under their auspices in the second floor of their building on April 2, 3 and 4. Make a request for program and other data. The firm have a big line of specialties for the amateur, including Autotype Carbon Tissues, Ross Lenses, etc. The new Ross-Zeiss-Tessar lenses are now ready of the speed of f3.5 and f4.5. The firm will be pleased to send catalogues upon making your wants known.

There's a softness and an indescribable charm about a print made on the new Royal Velox, redeveloped with the Velox Redeveloper, that places it at the top in the famous Velox family. The Velox is coated on a mellow toned stock which gives that desirable effect obtained hitherto only on the Eastman Royal Bromide or on a carbon print, and the Royal Velox prints are made without the usual carbon difficulty. We are not belittling a carbon print, as we consider them the acme of photographic printing, but, placed side by side, it is difficult to discover which is the carbon print and which is the Royal Velox. Even if you do not care to redevelop the print, the soft black tone secured in the usual way is beautiful. The paper can be had in all the Velox grades.

We are pleased to announce that Ralph J. Golsen, the famous lens man, has resumed business at 58 and 60 Wabash Ave., Chicago, under the name of the Ralph J. Golsen Supply Co. A new catalogue, No. 24, is in preparation and will be a novelty in many ways. The company carries a full line of new photo goods, and it will be money in your pocket to write for particulars and descriptive matter.

Curtis & Cameron, 95 Pierce Building, Boston, Mass., offer for general sale a sepia platinum paper of their own coating, which they have named "Harcourt Sepia." It is distinguished from other platinum papers by the superiority of its printing in tone and quality, by simplicity of manipulation, and by evenness of product. Samples are sent without charge, and correspondence is invited with photographers and others interested. There are two grades, smooth and medium rough. Additional grades will be announced from time to time in gray as well as sepia. All are fully guaranteed.

It is a dangerous thing to wrap exposed or unexposed plates in newspapers. Authorities have been telling us so for years, and yet amateurs will do it; the result being that the imprint of the letterpress shows up very badly when the plate is developed. It has been said that it is impossible to remove these markings, but I have been told of a method which I believe is new. I purposely wrapped some plates film side outwards, and secured some lovely markings, for the purpose of trying the process, and it acted splendidly. If the imprint can be seen before development—and it is generally possible—the impression can be entirely removed by bathing the plates, before developing, in a very weak solution of acetic acid—a 2 per cent solution is strong enough—then well wash with water and place in a bath of methylated spirit. Then dry, if necessary, or develop as usual.—*Focus*.

The more we employ the tank method of development the more grateful we feel towards its inventor. Just think of the many good hours wasted in the dark room, and more particularly during the summer months! We have a dark room, 'tis true, but only employ it now to fill our plate holders or load plates into a tank—that's all—and we use fewer plates than formerly. Don't spoil nearly as many and get better negatives. But the gem of the tank developing is with the Kodak film. No bother, no dark room and no waste. Just like all the Kodak products, the Kodak Tank Developer is simplicity itself. There's an interesting talk, "When to Stop Development," in our advertising pages this month—it tells you many facts in a nutshell.



We've often mentioned the fact that the average person will call anything in the shape of a camera a Kodak, and to be candid, we believe the name Kodak is better known to the world at large than the name camera. The latest surprise that we've had was sprung upon us recently. A friend asked us, "Well, how's the editor of *The Kodak*?" "*The Kodak*? Why, we didn't know that there was a photographic magazine by that name!" "Well, don't you edit a photographic magazine?" Then we realized that *THE CAMERA* was meant. Speaking about Kodaks, the newest baby is the 4x5 No. 4 Folding Pocket Kodak. It is a beauty and is going to become mighty popular. Ask your dealer to show you one the next time you call upon him.



Burke & James, of Chicago, have certainly given a boon to the photographer in their Ingento Automatic Developing Tank. The majority of professionals are now making use of tank development, not only because of its convenience and time saving, but also on account of the excellent uniform results in which the personal equation of liability to err does not interfere. What was needed was a perfect developing tank that would obviate any unnecessary handling and at the same time insure success. Burke & James, as practical photographers, have worked the problem out to completion, and their simple but effective apparatus leaves nothing to be desired.

From the Illinois College of Photography and Bissell College of Photo-engraving, Effingham, Ill., we have received the combined catalogue of both institutions. We have frequently referred to the thorough manner of instruction of the College of Photography, but just now we wish to call particular attention to the photo-engraving branch. This offers so many possibilities and is so well-paid a profession that we wonder why more folks do not take it up. There is no overcrowding, as the process plate maker has a field or output unlimited. There is hardly a photo-engraving house in America that is not invariably short-handed, and a good photo-engraver never needs to hunt for a situation. No stronger proof of the utility and economy in half-tone illustrations will be found than in *Pearson's* for March in the story about wood engraving, a lucrative profession some twenty years ago, but now practically obsolete. One of the most famous wood engravers of the country shows five specimens of his work, which probably took six or seven months' constant work to finish. *The same results can be secured to-day in a few hours by the half-tone process*, and commercially and artistically answer the same purpose.



Our knowledge of things greatly influences the impression the eye receives of them. That is, our judgment deceives our vision.

When we see a familiar object a mile away from us we imagine we see the actual detail and form it presents at only a few feet off. We recognize a friend, even see his features, "the peculiar trick of his frown," a block or so away, though in reality the image our vision receives is only an indistinct spot of color. The recognition of some peculiar movement of our friend with which we are familiar suggests all the rest to our sensorium. The mind sees more than the eye.

One foggy day, on crossing the ferry, we were surprised with what we imagined to be a number of grown-up men playing at leap-frog upon the wharf, which proved at our landing to be a company of very small urchins. The fog had not actually increased the size of the youngsters to our vision, but by obscuring the detail made our judgment imagine they must needs be at a considerable

distance, and if boys ought therefore to look much less in size than optically presented.

Is not this, then, an argument for the out-of-focus impressionist school? We are not going to discuss the subject here, but merely remark that aerial perspective in painting is not presented by smudging and blurring; neither is atmosphere in a photograph had by purposely putting out of focus, but rather by judicious use of the lens so as not to destroy the true artistic appearance of things by concentrating attention upon them, giving them more distinctness and detail than they present either to the eye or to the lens in its proper adaptation.

✽

Mirmont Photo Paper Co., Glendale, Brooklyn, N. Y., write us as follows: "We wish to inform you that this company was incorporated according to the laws of the State of New York in 1906, succeeding the Mirmont Company, manufacturers of photographic papers, of San Francisco. The Mirmont Company, at the time of the earthquake and fire in San Francisco, lost their plant in the conflagration after having been successfully on the market with their products for a short time. The success which the paper proved itself to be during this short period induced the company to rebuild at Glendale, N. Y., on a much larger scale, anticipating a large demand for independent photographic papers, which anticipation has since been amply justified." The company announce their complete line of products in our advertising pages.

✽

Focusing is truly a fine art and something artistically considered difficult to acquire. The photographer in search of the picturesque is always in a state of hesitancy when his hand is on the focusing screw and his eye on the view upon the ground-glass—not that there is any difficulty with our modern lenses to focus and apply a stop sufficient to get extreme distance accurately defined; but the truth is, there is as much photographic heresy in having every plane of the picture equally sharp as there is in having no plane sharp. With excessive sharpness all atmospheric effect is destroyed, and atmosphere is as necessary to artistic effect as air is to the animal economy. Yet we have known photographers to put off the taking of a picture because the air was laden with mois-

ture which beautifully softened the distance.

We have all amused ourselves when boys by bending down our heads to the ground and looking between our legs at the landscape. The novelty as well as the abnormal presentation of things delighted us then more than the artistic beauty; but this abnormal presentation of nature is just what we photographers have presented to us on the ground-glass screen when we are trying to make an artistic photograph.

Despite our experience in contending with inversions, our judgment as to effect is often in the condition of "Alice in Wonderland." Yet perversely we persist in imposing this condition upon ourselves where it might be avoided.

Do we not invariably, when copying a print or painting, prefer to set it on the board top-up so that it may be inverted on the camera screen? Yet this inversion prevents us from taking into consideration the subject as a whole in connection with its parts, and so our distribution of focus is not always properly made. Could we see right-side up, we would be more apt to notice that our sharpness of a certain plan in the picture above another would emphasize some objectionable feature and so mar the whole effect.

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Stained Ortho Plates

Much has been said about the pinkish stain sometimes seen in orthochromatic plates after they are washed and dried. This pink stain is due to the dye employed for the color sensitizing or orthochromatizing of the plate. In most cases sufficient washing of the fixed plate will remove the stain, but should any remain, it is of no consequence, as the printing quality of the negative is not interfered with. An acid clearing bath,

| | |
|-------------------------|---------|
| Alum | ½ oz. |
| Hydrochloric Acid | 2 drs. |
| Water | 10 ozs. |

is said to remove the stain entirely, but I have never found it necessary to employ such, and there is always some slight risk of employing acid clearing baths, particularly in warm weather; for though the alum may prevent any softening of the film, there is danger of the film frilling or leaving the glass.—*Newcastle Chronicle*.

The Use of Metol

It is not always advisable to implicitly follow the directions accompanying a photographic preparation issued by the manufacturer, although we would hardly recommend the method advocated by a well-known worker to immediately throw away the instructions or formula after opening the package. We would, however, advise a careful and critical study of the same before plunging into the operation. Most of the formulæ sent out by manufacturers are open to a good deal of criticism and require considerable amendment before we can hope to get the most out of the article under trial. These formulæ, by the way, are given by chemists who work upon a theoretic basis, and we all know theory is not all in photography, as we might demonstrate by many a case. Among the recently introduced developing agents, metol, perhaps, is one of the most valuable in some respects, being even superior to pyro. But many practical workers have contended that it is erratic in its action and not always reliable, the chief objection lying in the difficulty sometimes encountered in getting proper density. Personally, we have a predilection for metol, and believe that it is more energetic than any other agent, and seldom or never have to complain of its adjudged shortcoming in the direction of density. We think the reason why it is looked at askance and doubtfully is to be traced to the want of attention or care in selecting the chemicals associated with it. Metol requires also a little different treatment, or rather we should say, development with metol requires a little variation from the usual *modus operandi*.

With pyro, hydroquinone and even eikonogen, when seeking for density, we increase the proportion of the reducing agent over the alkali. Now, theoretically, this behavior should occur likewise with the use of metol, but generally in practice it does not, increase of metol giving only more thinness to the plate.

In employing metol its superior advantages as a developer as well as its ability to give equal density (under the same conditions of exposure, etc.) as pyro, can only be secured by positive assurance that the sulphite with which it is associated is above

suspicion. Where the sulphite is of a doubtful character, we shall find that any addition of alkali instead of increasing the energetic action, reduces the action. In practice it will be found best to have a pure sulphite and to increase the quantity in the developer in proportion with every increase of alkali.

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The National Academy of Photography

To the Members of the Photographers' Association of America:

After close investigation of the report of the committee appointed at the Niagara Falls Convention to consider the suggestions offered in the president's address, relative to the establishment of a National Academy of Photography, and considering also the present status of that report, as placed by the vote of the convention, I beg leave to present to you the conclusions arrived at, and, as far as authority has been vested in me, the action taken in obedience to the unquestioned wish and intention of the convention:

1. I have recently found that there exists a little technical difficulty in the way that this resolution authorizing the establishment of the proposed Academy was disposed of by the convention. I do not deem it for the best interests of the art of photography from our professional point of view, and as loyal members of this Association, *to have even a suspicion of irregularity* attached to the expressed desire of the Photographers' Association of America becoming sponsors for the establishment of this Academy.

It is upon its success that all of our hopes and aspirations for the maintenance of the highest ideals in the art are centred. It will be our supreme court of appeal, the decisions of which it is expected will be widely and loyally upheld, carrying weight and authority because of the honor, ability, independence and highmindedness of its members. I have therefore decided *not* to appoint that committee, as was expected of me by the Niagara Falls Convention, whose duty it would have been to create and launch the Academy, but will instead carry the matter to the Dayton Convention to have this parliamentary difficulty adjusted, and the wishes and intent of the 1906 convention ratified

and affirmed, and the method of this appointment and the personnel of the committee in consequence of this delay there determined.

2. By counsel with expert parliamentarians, I have been informed that precedents galore have been established where, under like conditions of *fact and intent*, committees have been appointed, important works started upon, and even in many instances large sums of money have been expended or contracted for. This has been done through an oversight or *misinterpretation of power imparted*, where a subsequent ratification of the interpretation and approval of the progress made were necessarily advisable for legality.

My attention having been brought to this matter of irregularity, which had previously escaped me, I cannot either ignore it or proceed now to appoint a committee, even if instructed to hold over without decisive action until their appointment under the circumstances was approved.

Even if the right kind of a committee would serve under such conditions, to do so would savor too much of forcing the approval of the Dayton Convention, partaking also, in my opinion, of undue personality on my part, and especially injurious would it be, as it would present the Academy idea as being a matter that must needs be put through by hook or crook, when, on the contrary, its inauguration should be freely open to the fearless inspection and judgment of every photographer of standing in the land.

3. It is clearly, however, within my jurisdiction, and I consider it also my duty in furtherance of the spirit and intent of the Niagara Falls Convention, to appoint a general committee of a number of our representative men to meet as early as possible during the progress of the Dayton Convention; this committee to consider, on behalf of our *entire* membership, certain matters which it is advisable to have expression upon, as suggestions for the guidance of those who are to create the Academy. There are in addition certain other duties which we as an association have to perform in relation thereto, such as—

(a) To appoint a sub-committee to take the preliminary steps necessary for its establishment;

(b) to consider the details of organization;

(c) The status of the Academy, whether it be strictly professional or not;

(d) The standard of membership;

(e) Its number, etc.,

and such other matters, amendatory or in addition thereto, as may appear to them meet and proper without unduly embarrassing, nullifying or rendering impossible the ultimate establishment of the Academy, which, to command the esteem and support of the profession, must also command the respect and approval of an educated public.

In the appointment of this committee I name no chairman or secretary, leaving the committee to organize at the time.

Such preliminary work, if any there may be to perform before the meeting at the Dayton Convention, I will personally look after.

The Executive Board for 1907 of the Photographers' Association of America consists of C. J. VanDeventer, president; C. L. Lewis, first vice-president; A. T. Proctor, second vice-president; F. M. Medler, secretary; F. R. Barrows, treasurer. Also, ex-Presidents W. H. Potter, C. M. Hayes, J. M. Appleton, J. S. Schneider, R. P. Bellsmith, G. H. Hastings, S. L. Stein, E. B. Core, J. Will Kellner, G. M. Edmondson, J. G. Nussbaumer, C. R. Reeves, G. G. Holloway; and Alfred Holden, W. S. Lively, E. Goldensky, Geo. E. Tingley, G. H. Van Norman, M. B. Parkinson, W. G. C. Kimball, J. Knaffl, S. H. Lifshy, Pirie MacDonald, J. C. Strauss, J. H. Garo, J. Edward Rösch, W. H. Hollinger, Dudley Hoyt, I. Benjamin, A. L. Bowersox, E. S. Curtis, H. D. Beach, D. D. Spellman, C. C. Pike, W. N. Brenner, J. E. Giffin, J. H. Kemp, F. M. Somers, W. F. Van Loo, Geo. Sperry, Ryland Phillips, H. Schreeve, G. G. Rockwood, J. Kennedy, Toronto, Ont., W. F. Core, E. E. Dietrich, W. H. Moses, W. L. Koehne, Chas. Stafford, Sr., B. Frank Moore, Charles Wallender, J. M. Bandtel and C. W. Hearn.

The above committee is largely composed of men who have been prominently connected with the association and loyal supporters of everything looking to the best interests of it and the art of photography in general. The results attendant from such a gathering would be most helpful. Sincerely,

CHARLES WESLEY HEARN,
President P. A. of A. for 1906.

There is much information in landscape photography accessible to the photographer in search of the picturesque; but the chief difficulty lies in the means to apply the knowledge of the essentials which go to make picturesque landscapes. It is wholesome advice, no doubt, to recommend the beginner to avoid scattering subjects; but even when he starts out with the best intentions of obeying this injunction he still finds it a most difficult task to compose a picture, that is, to unify the various elements in the scene. There are so many objects which seem of equal consequence that his untrained eye is distracted. He looks in vain for suitable contrast or for some emphatic light to give harmony to the composition.

Unity in variety, the subordination of many to one, is a fundamental principal involved in the production of a picture. The balancing of line and masses of light and shade are the means of securing this unity in variety. Much knowledge may be derived from the study of the landscape painters, of the marvelous effects upon a scene of the softness or intensity of light pervading a picture. Even in a natural scene one may perceive the wonderful transformation effected by a change from vertical light to an illumination when the sun is low down upon the horizon.

Effects are heightened by an attention to that peculiar arrangement and contrast by light and dark. A photographic lens renders one plane only perfectly distinct and so unduly emphasizes the detail of that plane. What we really do want is diffusion of focus of natural vision—not the fuzziness produced by throwing the lens out of focus, since even in the so-called out-of-focus condition of definition there can be no equalized planes.

Fuzziness, it is true, often comes nearer to the actual presentation of nature than rigid sharpness, but it is evidence of lack of judgment or the mere blind following of

precedent which leads photographers to discard the value of good definition when the subject artistically demands it, for it is not high finish nor expression of detail which is objectionable, but tastelessness of finish or detail in the wrong place. Detail must be subordinate to general effect and not thrust itself forward. We do not account a painter great because we can count the stitches on the embroidery in the drapery.

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Of all photographic operations, focusing is one of the least possible to dispense with, despite the dicta of the impressionist that it is of no importance artistically. But there comes a time when it is essential to execute it with all possible exactitude, for on a correct focus of the image depends the distinctness of the proof. As we all know, the method of focusing in present use consists in receiving the image upon the ground-glass of the camera and then substituting the sensitive plate as far as possible in the same plane.

Although it is exceedingly difficult for a cabinet maker to rigorously replace one plane by another, many cases occur in ordinary practice when the degree of precision obtained, though only approximate, is nevertheless sufficient. But in cases where it is impossible to obtain an absolute precision no certain means as far as we know exists to make absolute exactness in planes. One case of especial difficulty is when, with a small diaphragm and long focus lens, engravings are to be reproduced. Here approximation will not suffice. The negative must give the reproduction in all its purity of line. The finest and most delicate tracings in an etching must preserve their relative values. The least difference in focusing, however slight, creates a sensible imperfection. The length of focus and the limited dimensions of the aperture of the diaphragm admit of but a very badly illumined image on the ground-glass, and even a good vision left to its own unaided powers has great difficulty in seeing it. A difference scarcely at all perceptible on the screen shows up manifestly upon the negative. Every one accustomed to copying engravings, etc., has met with this experience.

The use of a magnifying glass is often had recourse to, but its aid is not an agreeable one, inasmuch as it magnifies at the same

time the grain of the ground-glass. To obtain more light while focusing some operators introduce a larger size stop than they intend ultimately to use, but this procedure is also attended with danger, for the focus varies in ratio of the aperture. The subject of accuracy of focusing is one demanding careful and lengthy treatment, and we have merely here touched upon the topic to incite discussion.

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Concerning the So-Called Optical Sensitizers

It is a question whether the dyes employed in making a gelatine emulsion orthochromatic do not sometimes act merely as ray filters rather than sensitizers; that is, take the place of the yellow screen we place before or behind the lens. It is only such substances as are capable of causing an increase of sensitiveness to the tardy acting spectrum rays that can properly be called orthochromatizers. There are substances which not only increase very appreciably the sensitiveness for single rays, but indeed for nearly the whole spectrum, with exception of the extreme red. To do so optically is, however, quite impossible.

Such sensitiveness can be produced only by molecular action—a regrouping of molecules. There are a large number of substances which are colorless, but still powerful sensitizers for certain parts of the spectrum—atropia, lercia, aesculine and others.

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Finders That Don't Find

Whether it be true or not, as some workers assert, that a finder is not a necessary adjunct to the hand-camera, one fact is sure, that the majority of finders attached to the instrument are not only faulty, unreliable, but also inconvenient. The chief drawback to their reliability is that they are often misleading, for few of them show the same angle of view as that given by the lens of the camera, and besides they are so placed that they do not show the position of the image as it is reproduced in the negative. This can easily be proved by placing the camera at a window and arranging it so that some conspicuous object falls on the centre of the finder glass and then noting it if coincides with the centre of the ground

glass of the camera. But if the camera is of the Kodak variety—that is, does not admit of viewing the object on the ground glass screen, it is necessary to take a negative and then estimate the degree of coincidence or deviation with or from the centre. What the practical worker wants is a finder which shows in miniature exactly the scene as it will appear enlarged on the negative, and this is what the majority of them just fail to do, and this failure is the cause of the discarding of the finder altogether by the practical worker.

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Floor Light

Photographers are apt to use as much light as possible in illuminating a sitter in order, as they imagine, to reduce the time of exposure. Their end is, however, not gained by this means after all, for it must be remembered that it is not so much the quantity of the light as the concentration or compactness of it, so to speak, which produces the best results. It must not be forgotten too that only a limited quantity of direct light can fall on the sitter and background, and all over this quantity falls on the walls of the studio and on the floor, to be again reflected obnoxiously into the shadows of the picture or into the front of the lens, perhaps thus detracting from the vigor and brilliancy of the finished picture.

Of course it is imperative to shut off direct light from the sitter or from the front of the lens, but many are too indifferent about its appearance upon the floor of the studio, the effect of which is injurious in two ways. The reflection is thrown upward, producing that strange and unnatural appearance in the eyes which we see on the theatrical stage by reason of foot light illumination, which demands so much painting on the part of the actors or actresses to neutralize its effect. The use of a black screen on the floor will be found of advantage.

This suggestion may seem a trivial one, but our attention was directed to its importance recently on examining a number of well posed pictures at an exhibition in which the visual defect of what might be called rather ineuphoniously perhaps, dead-eye appearance in the picture.

EDITOR OF THE CAMERA

Dear Sir:—Some time since you asked contestants in your photo contests to state whether they preferred medals, material or cash. The inference from this was that you were not getting as many prints as you would like in these contests. May I suggest that one of your rules is somewhat at fault—I mean the one in which you reserve the right to reproduce any print submitted. Very few photographers are going to send good pictures, knowing that if they do not win a prize you are likely to reproduce them, making them useless for any other contest, since other magazines don't want any prints that you have published. If you want to keep that rule make your prizes big enough to draw good prints in spite of it. The rule about prints that have appeared in other magazines is all right, but the two combined do not give the photographer a proper "show for his alley."—C. V.

In the matter of prizes, we put the matter up to the postal authorities, asking if we could give cash instead of medals, and the ruling handed us was "that we would be classed as a lottery and that the giving of cash for prizes was illegal." We would prefer giving the cash if there is any way in which we could do so. Regarding the paragraph referred to, we have removed that from our rules. It was placed in the rules so that it would be understood that we had the right to reproduce the winning pictures.

Mounting Paper Prints on Cloth

In order to do this satisfactorily, the one essential is that both cloth and paper shall be thoroughly or correspondingly damp at the time they are laid together, and if this principle is acted on, no real difficulty should be experienced by an intelligent worker. It is not, however, easy to handle the wet combination, hence the special advantage of the method. The wet print is squeegeed

face downwards to a sheet of waxed metal or glass, the back is now pasted, and the cloth applied and squeegeed down. When dry the combination can be stripped from the plate. This method, if carefully carried out, gives a suitable basis for prints that are to be bound in a book with letterpress, there being very little fear of the stitched or cemented edge breaking away.—*English Mechanic*.



An Alcoholic Starch-Gelatine Mountant

A writer in a German contemporary suggests the following, which is somewhat on the lines of the old mountants that were much in vogue about twelve years ago:

| | |
|--------------------|--------|
| Wheat starch | 40 g. |
| Rice starch | 20 g. |
| Gelatine | 5 g. |
| Water | 250 g. |

Allow the gelatine to soak in the water, then dissolve by the aid of heat, and add generally the starches; boil, with constant stirring, till the bulk of the mixture is reduced by one-fifth, and then cool down a little and add

| | |
|---------------------|-----------|
| Alcohol | 20 c.c.s. |
| Oil of cloves | 2 c.c.s. |

Pour the mixture, whilst warm, into bottles or collapsible tubes.

This is said to form an extremely adhesive paste, which, though stiff, can be rubbed down with a stiff brush into a perfectly smooth, even cream, which does not tend to cockle mount or print or penetrate the latter.—*Photographic News*.



Printing Dodges

The great majority of photographers, to judge by the unattended printing frames that may be seen in the windows as we pass along the streets, print from their negatives without any attempt at shading or dodging whatever. Yet the negative that will give a print which cannot be improved, often very much improved, by a little shading during printing must be one of the very rarest of photographic curiosities. If the reader has any doubt about this, let him take a negative and try what he can do with it. A card may be held over part while the rest is allowed to print deeper, or the focusing cloth may be employed for the same purpose. If there is one spot which wants

more printing than the rest, a hole its size and shape may be cut in a piece of card, and holding this at right angles to a beam of direct sunshine, the light passing through the hole may be allowed to fall on the spot. If the frame is also held in the hand, it is easy to give it enough movement to prevent any harsh lines showing; but a better plan still is to rub down the part that is too dense with alcohol. The great thing is to realize the possibility of dodging during printing, and take advantage of it to the full.—*Photography*.

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Negatives Suitable for Various Printing Processes

As the sensitiveness and other qualities of printing papers—Bromide P. O. P., Platinum, etc.—vary, it is important that for the best results the negative should be as far as possible adapted to the printing process—*e. g.* from the same negative one might get a weak and flat P. O. P. print, a passable platinum print, and a strong and vigorous carbon print; consequently, in determining exposure to be given, and in choosing our developer, we must keep before us the kind of negative desired, so that it may have such density and contrast as is best suited to our printing process. The following table puts the matter in a convenient form:

Collodio-chloride.

Very thin, with abundant detail.

P. O. P., Self-Toning and Bromide Enlarging

Delicately graduated from almost bare glass to moderate density.

Bromide Contact (artificial light) and Gaslight.

Very slightly more vigorous than for P. O. P.

Bromide (daylight) Contact and Platinum.

* Contrasts required are somewhat more than the last named.

Carbon Process and Albumenized Silver Paper.

A moderately plucky negative without excess of contrast

Errors in exposure and development resulting in extreme flatness or excessive contrast may be modified by intensification or reduction, as the case may be, but it is much better, if possible, to obtain suitable negatives at the outset rather than to rely upon any after-treatment. Of course, if we have a negative which we do not wish to risk with any after-treatment, we can, by selecting a suitable printing process, get the best possible result from it.—*The Imperial Handbook*.

I was always under the impression that the boomcrang was a weapon only employed by the savages in Australia, but I find that the editor of a San Francisco photographic magazine is a user of this weapon and jealous of the poor savages. On page 491 of his December issue appeared the following paragraph, and as I am the office boy of *THE CAMERA*, I'll be derved if I think the cut on page 421 of the December *CAMERA* is "wrong-side up or wrong-way round." At any rate, I'll bet a good apple that Mister Clute had a "Chink" for his office boy when he "made up" the cuts on page 461 of his December issue, because cut number 6 has a man standing on his head and the curbstones on a street forming the sky; the whole effect is beautified by the roofs of the houses forming the cellar. Mebbe he has fixed his window panes and will now stop throwing stones.

IN ALL KINDNESS.

At this season of the year one is inspired to an even more than usual kindly inclination, and it has occurred to the editor that he might possibly add to the sum total of editorial happiness of the photographic brand by inserting a few advertisements in this department this month. A careful search of our files fails to reveal the name of several of our brother editors, and in another case where two guilty parties are named, the same issue credits an article to "the" editor. Obviously, names and addresses cannot be given in each case, and we must ask that replies be sent to this office. All care will be used in forwarding, and if necessary a messenger will be disguised as a possible subscriber.

* * * *

WANTED—A device that will prevent cuts printed in a photographic magazine by its own printing office from being run wrong-side up or wrong-way around. Something that will be suitable to the intellect of the average office boy who is entrusted with the work of making up the magazine.

As *THE CAMERA* is the only photographic magazine in America printed in its own printing office, of course Mister Clute meant us.

REGISTERED IN U. S. PAT. OFFICE, NO. 81107

A Simple Method of Making Daguerreotypes

RECENTLY we were shown a daguerreotype which, for brilliancy and perfection, was the finest we had ever seen. The subject was a modern one, and the maker of this daguerreotype, Mr. J. W. Weiseisen, of Riverton, N. J., promised to go into detail regarding the method he had employed in making them. Our mind reverted to fuming boxes and the kindred paraphernalia employed in making daguerreotypes, and we felt that we were unequal to the task of making them, but when Mr. Weiseisen stated that he could make at least a half dozen in an hour, and would demonstrate the fact, we had to believe him. Finally, the method was explained to us, and as the idea is entirely original with Mr. Weiseisen we want him to have the full credit.

First, secure a piece of copper, such as is used by half-tone plate makers or engravers, or a plate such as is used by copper-plate printers, clean it carefully and have it free from scratches or markings, then go to a silver-plater and have the copper plate silver plated, then carefully burnished after the plating. From whatever negative you desire a daguerreotype make either a contact or reduced copy of it upon a lantern slide plate, developing, fixing and washing it as usual. Have the slide contrasty with clear glass in the high-lights. Place the lantern slide positive film side to the silver-plated copper plate, bind the two with binding tape or passepartout binding, and you'll have a daguerreotype far more beautiful than the original process and without its numerous failures and difficulties. A thin mirror will not do, as the thickness

One is not confined to the lantern slide size, as the regular transparency plates for larger negatives may be employed as well. The cases for the daguerreotype, should you not have old ones, can be made by any casemaker for jewelers at a very trifling cost. The thin brass and copper shell or frame you can have made by any fancy metalworker, and he may have on hand a die to cut out or stamp a design on the frame if desired. If only plain frames should be wanted, buy an ordinary brass "cut out" and you can readily do the work yourself.

Balance

By H. R. POORE

PROCEEDING with the twelve postulates on balance, stated last month as a short code of principles for the student, that *motion toward a space is frequently the equivalent of balance there*, may have exposition in the picture of the "Fagot Gatherer." We acknowledge a completeness in this lone figure bending under her burden. The simple statement regarding a toiling woman, namely, that she is bearing a load of sticks and wears sabots, is quite enough to quicken all the interest which may be required. The bare hillside and sky are the sole supporting elements with which this heroic figure is placed, and in their simplicity each is coresponsive. An item in the distance is bound to take from the figure that quality of isolation which adds to the force of it, and if present could only be there without injury as a balance, not to the figure, but some other element with which it balances—a rock, shrub, cloud, flying bird, or other.

The reason is that the figure in a moment more will occupy the centre of the stage and show us a complete balance. The mind is always anticipatory. It always beats time slightly in advance of the rhythmic recurrence. It has taken another step before the figure has.

Compare this bearer of burdens, expressing movement, not only in her stride but the forward action of the bent body, with the younger woman whose next

THE FAGOT GATHERER

Balance—motion towards—balance

Balance—motion towards corrected by distant opposed landscape

step will take her out of the picture. Clear the horizon of the distant trees, these far-off weights upon the long arm of the steel-yard, and the same anticipatory action of the mind will do the same thing in the foreground. In other words, the figure will have passed on, leaving an empty landscape. If, however, this lively anticipation is not shared by the reader, judge of the picture constructively without those trees. A sense of incompleteness is the first impression, and the reason for it is the sheer line cutting through the picture vertically with the entire interest on one side. As it stands, a fine cohesion exists in the diagonal lines, transitional with the body and a triangulation from the far end of this to the trees. This imparts a great diagonal movement in the background, taking our mind, in a measure, away from that element of the picture which is not fixed. This figure in the same space, *entering* the picture, would require no trees in the distance, which, under reversed conditions, become the element of unity in its construction.

The principle controlling this postulate is entirely psychological, but none the less appreciable and practical.

In the following example of the same woman with a basket, pictorial force has been lessened by the introduction of another figure. This does not share the movement of the principal, but opposes it and becomes a heterogeneous element; yet, without the kneeling figure the picture would lack almost every recommendation. The fine curvilinear quality of the bent figure, arching from heel to forehead, is the first—a line so expressive of “motion towards” does not here exist, and so much of the picture space has already been covered that our anticipatory accompaniment has put her beyond the centre.

If, however, the kneeling figure should in any way ally itself with the principal, as by a turn of the head or other association, then the motion forward would not be antagonized and this law of balance would prevail through another, namely, “two or more associated units may be reckoned as one and their united centre becomes the point on which they balance.”

The question of movement as a factor of balance has more to do with the essence of it than placement. In fact, if a picture lacks the discursive quality, it is just as dead as a discourse or an argument which takes us nowhere. Unless there be a natural progression the items of the picture are nothing more than a bundle of facts, a collection of items hung upon a clothesline, as one may view them in the arrangement of trees from the pencil study by Henri Harpignies. The same trees, placed with the discursive possibilities which enables the eye to proceed from one to another quickly, take on the appearance of a picture, complete in its *ensemble*, instead of a study of single items.

The swing or movement of this picture, together with the balance of flowing line and items of stationary attraction, the trees and castle, are largely what impart to it the serene confident sense of repose.

HENRI HARPIGNES

Analysis quickly makes us conscious of three trees diagonally placed across the picture with a carum upon the castle and a return across the centre to the left side, where lies the exit at the horizon. Across the first diagonal flows the river, in due course uniting its line with the same swing of the trees, then ceasing to be an attractive element as the line of sequence persists through the castle to the horizon. The variety of movement in the beginning of the picture becomes unified when, for the sake of balance, this is essential. It might have happened that the line of the river was visible tracing its way to the extreme right and disappearing through the side of the picture, thus causing a double attraction on either side of the castle. But the integrity of the picture's natural line of procedure would thereby be endangered and it is left a mystery as to whence the river comes.

More noticeably than with any other class of subjects does this fact of balance through sequence apply to the wood interior. What an enigma is the woodland when we observe that sometimes a familiar spot looks to us pictorial and sometimes not. If one has never acknowledged the need of the principles of composition just here is a good time to pause and reflect. A photograph in the early morning may produce but a jumble of trees; later, when the sun selects one tree and another upon which to shed its light the elements of principality, co-ordination, sacrifice, light and dark, procedure, balance, begin to enter in, when suddenly what we regarded hopeless as a subject has sprung into art life. We seize its possibilities, unlimber the kit, set the palette or focus the instrument. But while engaged, and without our apprehension, the earth has moved from the sun, and most of those art qualities are lacking and the result

HENRI HARPIGNES

is as before, only a jumble of trees; the same trees, the same viewpoint, but their simple presentment by us has been without the art principles, and we destroy the plate or paint out the canvas.

In the study of balance through the movement or swing of a picture one soon becomes sensitive to whatever, without right, catches and detains the eye. The wood interior, with its endless detail, affords more discipline just here. Whenever we are moved to simplify it is almost always to rid our subject of things which interrupt a scheme of light and shade or the natural sequence which balance demands. Strange it is that so small a thing as a stick or twig, if it refuse to get into the larger scheme of which it is a lesser part, often works much damage, may be made to conform by simply changing its direction. One may look long for the reason why a subject has not been unified and find it frequently among the lesser things. Injury to any one of the forty of a snake's vertebrae destroys its easy flow of line and interrupts that wonderful motion without apparent effort.

The value of a diagonal line carrying the vision to the opposite side of the picture away from the main object of attraction and its subsequent junction with that object through another diagonal is to be found in this picture of "The Balloon," by Mr. Prendegast.

The great angle thus made along the edge of the crowd which the eye soon detects as waiting to receive it is the item of balance for the large sphere prominently placed to one side of the canvas. From this again the vision moves away through the sails to the opposite side. It is an example of the principal object occurring on the inclusive line, with this line traced through what appears to be a haphazard crowd of people. Its discovery without difficulty adds much to the movement of the picture, and our ability to follow it we know to be due to a well-tried guide.

THE BALLOON

PRENDEGAST



Portraiture—A Criticism

By John Bartlett



THE subject for competition this month is "portraiture."

People who know little about photographic portraiture wonder why there should be any difficulty in photographing a face, and will ask, "What is needed to be done besides uncapping the lens and consigning the plate to the developer?"

The difficulty with the photographic portraitists, as well as with the painter of heads, lies in possession of ability to see what of beauty is before him; and here the individuality of the photographer may make or mar his work.

One is apt to imagine he sees the whole of nature's excellency when he sees it through his own spectacles of preconceived ideas. The conception of some untrammelled painter is often a revelation.

Occasionally one sees a head, a photograph taken from life, which is so closely akin in its pose and treatment of light and shadow to fine engravings from portraits by Reynolds, Raeburn, Stewart and others equally eminent that one is astonished at the similarity. But you will say: "See the amount of

commonplace work produced by portrait photography." Did not the most eminent portrait painters have to turn out many a work that was no picture? A mere "*pot boiler*"? And think of the hundreds of portraits painted by men of no ability who were working contemporaneously with the world's great portrait painters and whose productions have passed into oblivion. When a noble head, properly posed and lighted, is rendered with all its dignity, in exquisite refinement of light and dark, is it any the less a work of art because a lens was used instead of a brush? I often think what would Raphael or Michael Angelo have said, after laboring for hours to reproduce in sketch with the silver point, could they have been shown some of the magnificent heads now exhibited by our photographs of the advanced school, the result of the artistic faculty in securing the fine model for reproduction and of knowledge and taste in the posing and lighting. I think they would have dropped the silver point and used silver bromide, and with greater satisfaction, for its facility in embodying their conceptions.

What is the reason that so many pictures, perfect in a technical aspect, do not please, and although presenting a faithful copy of the model do not resemble it and are generally considered bad. "It is the fault of the original," exclaim many operators.

Frequently such an excuse is admissible. Actually the photographer is powerless to render the picture handsomer than the original model. Still, there is no face, however plain, but it may be taken under one aspect rather than another, its defects disappearing more or less according as the face is presented to the axis of the camera and as the light and shade model the features.

To be able to seize the defects at a glance, to recognize the aspect which best conceal them, is one of the most important aptitudes of the portrait artist. The rapid solution of the problem enables him to produce what many regard as flattering likenesses, although, strictly speaking, they are only faithful copies of the original, but the original presented at its best. This valuable faculty is not bestowed generally. But these salient points in the development of the model are best secured by leisure study and observation under a variety of conditions. The human face is not one uniform thing, nor does it remain for any length of time the same. The light and shade upon it changes the expression with every movement, and a slight alteration of position can make a subject look entirely different. We have thus prefaced our criticism of the work for this month because we believe that all the recipients of awards or honorable mention have given conscientious study to their subject, and in a great measure we are gratified with the results, although we shall venture to offer a few suggestions for improvement.

The highest award has been given to Mr. J. Westey Allison, and we think him pre-eminently entitled to it for his praiseworthy production. The figure itself is admirably posed, and the lines of the drapery beautiful. There is an especial elegance in the long, flowing lines of the lady's habit, more becoming to her native grace than all the devices made of crumpled tissue, in which a lady is never seen clad except when she comes under the hands of the so-called artist photographer. Mr. Allison has shown his excellent judgment and ar-



THE CAMERA Silver Medal
Competition No. 203

J. WESLEY ALLISON

tistic taste in refusing to make use of such trumpery and in conforming the ordinary every-day costume to lines which suggest grace and ease of posture.

One of the most difficult things to arrange in portraiture is the disposition of the hands. They are more truly the unruly members. The tongue is not in it for perversity, and the photographer would fain cast them out into darkness, as he does sometimes by "vignetting" and other devices, but this is jumping the question. The hands are part of the portrait and ought to be there. All great artists have exhibited their ability in the disposition of the hands. They are made to tell the character along with the expression of the face. We are glad to see Mr. Allison did not dodge the responsibility, but has posed the hands of the figure most admirably, naturally and gracefully, but without the least affectation. We feel much of the characteristic pose would have been lost without the hands being visible. Now, these are the good points about

J. WESLEY ALLISON

Mr. Allison's award, and we shall point out what it lacks. The accessories might have been better managed and kept more in subjection, more subordinate to the general theme, more relieving, less self-asserting, and the beauties of the picture would have been accentuated better.

There is a natural tendency to use too much light in portraiture. The light side of the figure is in too high a key, and we miss the modulations which a more subdued light would give. I think the trouble lies in using too great an area of illuminating surface. It is well to have the source of illumination in two distinct parts. With one part the general illumination may be effected, and with the other certain parts which need it may be brightened up or the



THE CAMERA Bronze Medal
Competition No. 103

J. H. FIELD

light generally diffused. The former, falling from above upon the subject, illumines the projecting portions of the head; the other, from the front, illumines the deep shadows, subdues them or brightens them up according to the degree desired.

This intensity of light is more glaring in Mr. Allison's second full-length figure. The highlights border onto chalkiness and the shadows lack luminosity and gradation. The accessories are more obtrusive and self-asserting, and there are too many of them, so that the picture seems overcrowded with detail not necessary to the subject, detracting from it despite its gracefulness and ease of line. The expression of the face is not as good as in the first picture, but the hands, though not as skillfully posed as the first figure's, are still full of expression and repose.

The second award, to Mr. Field, is doubtless because he displays so much taste in posing his figure, but he deserves equal commendation for the skill in lighting his figure. The effect is soft and harmonious, without being hazy and nudgy or indistinct and the shadows are luminous. The whole picture is kept in a light key without any great range of gradation and reminds us of a pleasant little melody more than a rich harmony from high to low scale.

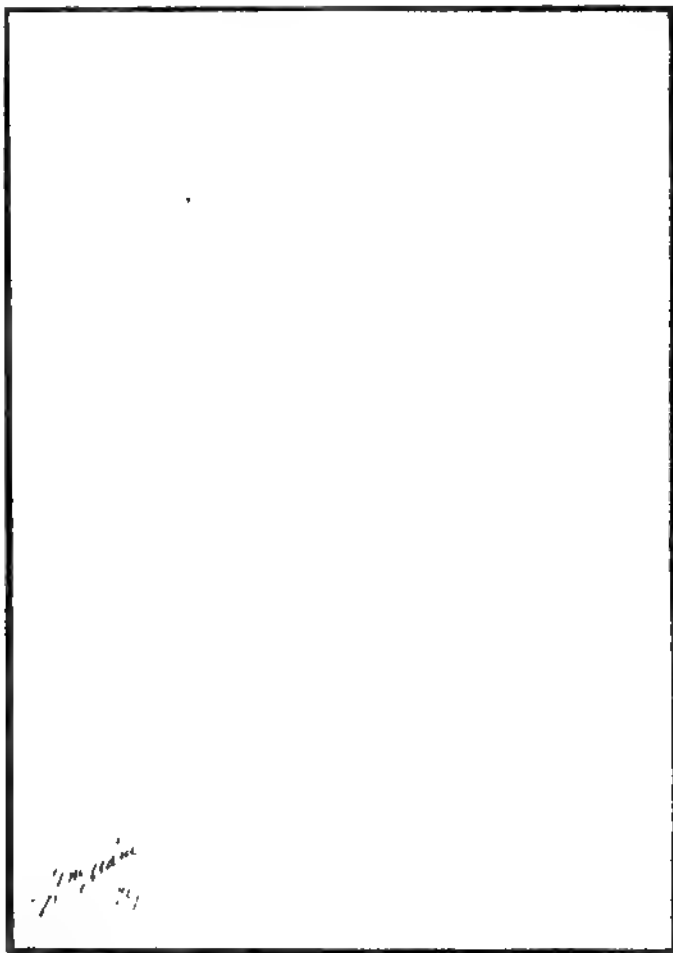
Honorable Mention
THE CAMERA Competition, No. 103

W. H. LITTLETON

Century Convertible Lens, f8, Seed 26 X Plate, $\frac{1}{2}$ second exposure, Seed's Hydro-Metol Developer; Autotype Carbon Prints (Portrait Brown)—mounted first on Niagara Hazel-Brown Paper, then Cream Bristol, then Hazel Brown Exposure made in July, 11 A. M., east window (indoors), size window, 30 x 50 inches, light strong, diffusing curtains and reflection.

The third award, to Mr. N. H. Littleton, for two small portraits, is given principally for the charming, naive expression of the child. It is not every one who succeeds with child portraits so admirably as Mr. Littleton has done, but we could wish that he had given just a little attention to the study of drapery, or rather that he had not essayed it at all and had left the innocents unadorned. The lines and disposition of drapery are very bad, and detract from the otherwise good quality of his work.

Mr. William Main gives us most excellent technical work in his veiled head. While such productions are not especially pleasing, one cannot help taking into account the difficulty encountered and the skill demanded in the making of it, so as to give pleasing results. Altogether, Mr. Main must be a good technician, as the printing and toning of the photograph bear evidence and the vignetting of the figure is admirable



WILLIAM MAIN

Stanley Plate, 4 seconds exposure. In December: B. & L. R. R. Lens, $f/8$, $10\frac{1}{2}$ -inch focus.
Glycin Developer, Platinum Print.

Using Both Ends of the Sky-light

By Felix Raymer



HERE is not the slightest doubt in my mind but there are many operators to whom the idea has never occurred that both ends of this skylight are equally susceptible of good work. It is so easy and natural for one to fall into the habit of using one end that unawares we seat our subject under the east or west end, as the case may be, and never think to try the other.

The advantages of considering the subject's face from both ends of the light are many, and after one has experimented several times he will be surprised to find what a vast improvement can be made in the picture of certain subjects by simply changing them to the other end of the light.

Of course, all operators know by having the subject seated under the west end of the light (this is supposing the light to be a northern exposure) the light falls on the left side of the face; and, of course, to change him to the east end would cause the light to fall on the right side of the face. Now, the changing of the light from one side of the face to the other places one of the best weapons in the hands of the operator for combating hollow cheeks, eyes, crooked mouth, nose and many other defects to which the human face divine is heir. There is an old maxim among operators that "every face must be lighted for itself," and to carry into fulfillment this maxim they prance backward and forward under the light in an aimless way, jerking a curtain here, kicking over a stool there, and then say they have made the lighting on each face differently. As a matter of fact, the only difference possible is to change the light from one side of the face to the other and concentrate it more or less as the face requires.

In the past few years I have had occasion to work under many different lights, and it has been the result of my observation that nine out of ten operators have their subjects seated under the west end of the light. This brings the light on the left side of the face. I have asked several why they preferred having the light fall on the left of the subject, and in most cases the answer was to the effect "they had learned to make it that way from the operator who taught them," and it had never occurred to them to change. Others did not know why "except the light seemed to work better from that end." But one *good* operator gave me what I consider a *good* answer, and that was "most men part their hair on the left side of the face, and as I make mostly broad effects of light, and as a better likeness can usually be made of a man where the part in the hair shows, I prefer the light falling on the left side." *Good* so far as it goes, but when I asked him "what of the ladies?" (somehow I always have a feeling for the ladies and don't want them left out), his answer was "they do not part their hair on either side, and it makes but little or no difference which side the light falls on." The point he made concerning the part in the hair is good, for, as a rule, the character is more strongly marked in the side of the face on which the part of the hair comes, and hence the likeness will be better.

But there are many other matters to consider beside the hair, or its part, and the ladies' faces must be considered as much, if not more, than those of the men.

All operators know (or should know) that every subject has one side of the face that is rounder or fuller than the other. Many operators, to fill out the hollow side and make it appear the same as the other, resort to the use of a head screen and thus flatten the entire lighting, or lower the light so that it falls on the face from a lower point, thinking by this means to fill the hollow cheek.

This it does to some extent, but at the expense of roundness to the whole head. A simpler plan would be to move the subject to that end of the studio that will allow the light to fall on the hollow side, thus placing the "full" side on this shadow side, away from the camera, so that it forms the outline. By so doing the light fills the hollow cheek, or so nearly so that it gives the retoucher an opportunity to get in his "modeling ideas" and correct what the operator could not help.

One side of every mouth is lower than the other. This accounts for one side of every face having a pleasanter expression than the other. The side on which the mouth droops has a depressed expression. Place the subject under the end of the light that allows it to fall on the side of the face in which the mouth turns up; this gives a better expression, owing to the fact that the drooping side of the mouth is hidden in the shadow.

One eye is lower than the other and smaller. Place the subject so the light falls on the lower eye, and "tilt" his head towards the higher eye. This lowers the higher eye and raises the lower eye, making them appear better balanced. The smaller eye should be placed in the shadow, so as to somewhat hide its form.

The nose turns to one side or the other, due to one nostril being larger than the other. Place the subject so the light falls into the hollow side of the nose, and it serves to straighten it considerably, and the retoucher can do the rest.

One ear is higher and larger than the other. Make a "three-quarter view" of the subject, allowing the light to fall on the best placed and shaped ear.

Some may question this difference in the sides of their subjects' faces. All I have to say is, "Look for yourself." If you can't see the difference, get glasses; if you still can't see the difference, try another business.

Many lights are placed so near the end of the building that they cannot be used from both ends. That is the operator's misfortune. If possible, have the light in the centre of the room, so that it can be used from every direction, and the operator has no reason for not getting *any* effect he may desire.



The Relation of Exposure and Development

With Practical Examples by the Author

In Two Parts. Part II

By C. H. Claudy



WE HAVE for consideration twenty-four negatives, all made at the same time, of the same subject, without moving the camera. There are six different exposures, ranging from twenty-five times under, through normal, to ten times over, and four different developments, ranging from one-fourth the normal to twice the normal. You have these negatives in front of you—if not all of them, most of them—and should be able to follow the story easily enough.

Let us consider first the normal development, Group One.

It is obvious that 3 is the best negative to any one who knows negatives. For the benefit of those who are yet unable to distinguish the points of a negative, let me point out the following: The negative is brilliant; that is, it has clear shadows and high lights dense enough to form good contrast, yet not too dense to print; the gradation is not abrupt, yet the contrast from light to shadow is marked, and the entire scale from the brightest high light, the sky and part of the marble steps, to the deepest shadow, the trees and the shadows of them on the grass, is kept within the printing range for almost any paper. Compare this with 3 of Group Four, which is developed just twice as much, and note how much greater and harder the contrasts are and that there is no longer a distinction between the high lights in the stone and sky. One has caught up to the other in the overdevelopment.

Now let us see what underdevelopment does for a normal exposure. In group two the 3 is not a bad negative, although it is thin, but a close examination shows that the sky and the stone high lights are similar, from the opposite reason that they are similar in 3 in Group Four—they have not yet separated enough in contrast to make a distinction. The development may be likened to two men running. They start together—that is, the blank film when the developer is poured on. They run side by side, or nearly so, yet one draws a little ahead of the other. Two high lights come up nearly together, but one a bit stronger than the other. The two men are separated perhaps ten feet (proper development) when the front one lags and the rear man commences to catch up with him. When he has caught him we have the condition shown in the two prominent high lights in 3 of Group Four—they are alike. In 6 of Group Four not only have the high lights caught up with each other, but the shadows have almost equalled the high lights in density. If the development were carried far enough on such an overexposed negative a complete sheet of black would be seen; the negative would be one solid high light.

One lesson, therefore, that we learn right here is that underdevelopment tends to lack of contrast for not sufficiently separating the tones. Normal development gives the proper gradation of tones on a proper exposure, and overdevelopment, while for a time increasing contrast, lessens contrast between tones; reduces the scale, in other words, by swallowing up detail in the high lights, and the overdevelopment, if carried far enough on an overexposure, results in absolute lack of contrast because all the parts of the negative have been developed alike.

Another very important thing I sincerely hope these illustrations will thoroughly impress upon the reader is the effect of development upon overexposure. There are plenty of good camera users who will tell you that the effect of overexposure is a thin, contrastless negative. They mean well, but they have mistaken effect for cause. The cause of the thinness and flatness is not the *overexposure*, but the *underdevelopment*. And underdevelopment is usually the portion meted out to overexposures for the following reasons: When the plate flashes up and fades away in the dish it becomes so black on the surface that little or nothing can be seen through it. The developer has

apparently done its work, and the operator removes the plate in one-fourth the proper time, to prevent it getting "too thick."

The result is plainly shown in 6 of Groups Two and Three, which are ten times overexposed and one-half and one-fourth developed. Thin, contrastless and useless, both of them. But now look at 6 of Group One, which is exposed just the same—ten times over, but developed the normal interval. It is thick, it is true, but it will print, and print fairly well; at any rate it will make an infinitely superior print to the two 6s of Groups Two and Three. As the development was the proper one for 3 of Group One, and as they all had the same development—all of Group One—it is obvious that the normal time of development is best for an overexposed negative. That it should not be overdeveloped is shown in 6 of Group Four, which is so thick it wouldn't print anyway, and the contrasts have been destroyed by the shadows catching up to the high lights.

Now all this has nothing to do with *known* overexposure and the preparation of a special developer loaded with bromide. This is not a discussion of what to do in special cases, but of what to do when things happen as they usually do happen. It isn't once in a dog's age that any one develops an overexposure and knows it as an overexposure beforehand. It seems merely common sense

to suppose that if you know that the time you intend to give a plate will be over the normal you won't give it.

Consequently, to get right down to practice, when you find an overexposed plate in your tray in front of you, let it alone. Develop it just as much as you would a normal plate, and you have the best chance of saving it.

Now I come to a somewhat discouraging proposition. *Apparently* my films show that overdevelopment is the best thing for underexposures. I refer to 2 of Group Four, as contrasted with the 2s of the other groups. It certainly appears the best negative, but as a matter of fact it isn't. It is easily the most brilliant and the pluckiest, *but as compared with the original* it is very bad indeed. I can't hand you the Capitol Building to look at, but just compare this 2 of Group Four with 3 of Group One, a normal negative. There is no question here as to which is the best negative; but just look at the difference between the two in the degree of contrast between sky and dome, sky and sunlit marble, the parts of the building in light and in shade. Bearing 3 of Group One in mind, compare 2 of Group One with 2 of Group Four. It is much thinner and won't make so pretty a print, but it will make a print more true to nature. Now, in the case of a building like the Capitol, where tonal accuracy is not the first thing demanded, I don't know but what an overdevelopment of underexposure gives the most pleasing results. But take a case where everything depends on the relation of tone to tone, as a portrait, especially a draped-in-white portrait, or a flower study, or a reproduction of a painting, and try normal and then overdevelopment of an underexposure, and there can be no question that the normal development is the best. Reference to the 1s and 2s of Groups Two and Three show that underdevelopment is the worst thing you can do to an underexposure, the image simply coming up in a silhouette of high lights.

Now I want to consider the development side of these questions a little. I want you to look at Group One, leaving out of consideration negative 1. That leaves us five negatives, which range from ten times under normal to ten times over normal exposure. (I cut out 1 so as to make the range or swing ten times on each side of normal.) These negatives were all developed together, in the same solution for the same time.

Now hunt through the other groups and see if you can find any other negatives better than these; that is, if you can find a better 6 among the other 6s, a better 1 among the other 1s, etc. The only chance you have to succeed is to claim that the 2 of Group Four is better than the 2 of Group One, but as I have already explained, it is better only in seeming; it is an untruthful negative. If you cannot find better negatives in the under- and overdeveloped specimens before you than those I show you as normally developed in a tank, you are self-convicted of admitting the superiority of tank development. No, not film-tank development, or Eastman Kodak tank development, or any particular brand of tank development, but tank development in the abstract. "But," you say, "how do I know I couldn't have done better if I had developed those over- and under-exposures by hand by myself?" Because you would have to do one of three things—develop them normally, correctly, or underdevelop them, or overdevelop

them. And I show you normal and under- and overdeveloped negatives all with times the same, and you admit the normal developments of even the over- and undertimed plates to be superior to either the over- or underdevelopments. And there you are. I expect to see you order a tank to-morrow.

Another lesson, which is here put forth for any one to read who will, concerns the enormous latitude of the latter-day emulsions. Here are plates which range 1,000 per cent. over and 1,000 per cent. under in exposure which give prints, and very good prints at that. I have heard it said and have, until recently, not questioned it, that if 3 was the correct exposure, from 1 to 5 would give a good negative. But here you have it in front of you, that if 3 is correct you can expose from three-tenths to thirty and get printable negatives. This applies to any good plate. And it explains why there are not so many failures now as there used to be, and why the beginner can get such a large percentage of good results when he really knows nothing of exposure. And it explains why those of us whom the beginners call "experts" can go out and bring home plate after plate which yield beautiful prints with hardly a miss once a month. It isn't that we hit the correct exposure every time, but we hit within the large latitude every time, or nearly so, and then, if our development is normal, which is a mere matter of care, we will get some kind of fairly good results.

I endeavor to practice, photographically, what I preach. I now use a certain solution, at a certain temperature, for a certain time, on all my plates. The more important the work the more care I take with the formula, the temperature and the time. But the plates are developed in the dark, covered, and by

time, and I get the maximum of good results. It was this surprising preponderance of good results which led me to first think of making these twenty-four exposures and giving them different developments and seeing what came of it.

Now, there are several things about these sets of films I have not spoken about. I believe they are instructive, and I think anything which is instructive at all is more so if it requires some effort. Consequently, I am going to ask those who are interested to write to THE CAMERA anything else they can learn from these negatives, in the form of an open letter, so the rest of us can read it. I can assure you that any discussion will be welcomed both by me and by the editor.

These transparencies can be cut from the magazines and kept together as reference tables for what is and what isn't a good negative. And they can also be used to print from, putting them against a glass as if they were films, and the prints will be an object lesson, too, in contrasts and degrees of tonality, and that is one of the things you will have to do for yourself if you want it done. Finally, I append a table giving particulars about each of the twenty-four negatives, to be used in connection with them when they are used as standards of comparison.

| | | | | | | | |
|---|-------------|----|--|---|---|---|---|
| 1 | Group One | 25 | times under, normal development. | | | | |
| 2 | " " | 10 | " " " " | " | " | " | " |
| 3 | " " | | normal exposure | " | " | " | " |
| 4 | " " | | 2 times over | " | " | " | " |
| 5 | " " | 5 | " " " " | " | " | " | " |
| 6 | " " | 10 | " " " " | " | " | " | " |
| 1 | Group Two | 25 | times under, half normal development. | | | | |
| 2 | " " | 10 | " " " " | " | " | " | " |
| 3 | " " | | normal exposure | " | " | " | " |
| 4 | " " | | 2 times over | " | " | " | " |
| 5 | " " | 5 | " " " " | " | " | " | " |
| 6 | " " | 10 | " " " " | " | " | " | " |
| 1 | Group Three | 25 | times under, quarter normal development. | | | | |
| 2 | " " | 10 | " " " " | " | " | " | " |
| 3 | " " | | normal exposure | " | " | " | " |
| 4 | " " | | 2 times over | " | " | " | " |
| 5 | " " | 5 | " " " " | " | " | " | " |
| 6 | " " | 10 | " " " " | " | " | " | " |
| 1 | Group Four | 25 | times under, double normal development. | | | | |
| 2 | " " | 10 | " " " " | " | " | " | " |
| 3 | " " | | normal exposure | " | " | " | " |
| 4 | " " | | 2 times over | " | " | " | " |
| 5 | " " | 5 | " " " " | " | " | " | " |
| 6 | " " | 10 | " " " " | " | " | " | " |

[Through the courtesy and special permission of Mr. Thomas M. St. John, of New York City, the patentee, we are enabled to reproduce the sheet of negatives illustrating Mr. Claudy's article.—ED. CAMERA.]

Firelight Effects by Daylight

By Henry Essenhigh Corke

SINCE the publication of my article in *Photography*, June, 1906, I have made a special study of novel lighting and firelight effect photographs, and have been experimenting with a view to obtain a firelight effect using daylight alone as the illuminant. That these experiments have been successful the illustrations to this article should suffice to show.

The usual method of placing magnesium or a flash powder of some description in an ordinary grate is always attended by a certain degree of smoke and dirt. Great care also must be taken to keep the smoke and flash well in the fire, so as not to have a flare in that part of the print. But perhaps the greatest drawback of all is that the actual effect of the lighting cannot be carefully studied before the exposure is made. Even if an experimental flash is used beforehand, it is so sudden that no time is allowed to see that no light strikes any portion of the sitter or is reflected from any accessory that will catch the eye undesirably, and that if noticed in time might have been easily moved or turned at a different angle, so as not to have caught the light.

On the other hand, when daylight is the illuminant, the light is continuous and steady, and gives one time carefully to study it and to make alterations until exactly the effect desired is seen to be obtained.

Although as a professional photographer with a studio I naturally used it for the production of most of these examples, there are none that cannot be quite easily done in an ordinary room, as I shall show later on; and the boy with the cat was taken in such a room.

In the case of those taken in the studio, the sitter was posed on a raised platform, so as to be on a level with the bottom of the window, in this case of ground glass and about two feet from the floor. The sitter should be as near the source of light as possible, so that the lighting may be rather concentrated. All the dark blinds are then drawn, leaving only a patch open about two feet square, just in front of the sitter, where the fire is supposed to be. A fender and hearth-rug are then placed in front of the light on the floor. In some cases it may be found convenient to place a mirror in the "fireplace," so as to give an extra amount of reflected light upwards onto the face of the sitter. A small strip of white paper may be placed inside the fender to look like the white hearth.

It is desirable to use a dark background, composed of dark curtains; these should not be allowed to hang in folds, but should be stretched tightly, or awkward streaks of highlight will possibly show on the folds.

Exactly the same effect can be obtained in the same way in an ordinary room and at an ordinary window. All that is necessary is to block up the window with brown paper, from the top downwards, as may be required, so as to give an opening of suitable size as low as can conveniently be managed. The sitter is then raised to a level with the opening, using a large dining table

HENRY ESSENHIGH CORKE

or a board supported on trestles for the purpose. The other arrangements are the same as just described.

Alternatively, if French windows are available, they may be used, and there is then no need for a platform. The sitter is posed on the floor, and a large white sheet thrown down outside the windows will be found to throw a bright reflected light into the room. If by any chance the ground outside should be covered with snow, the same effect is secured without the sheet. The accompanying illustration of the boy with the kitten was taken under such conditions.

The exposure should err on the underside, as a rather hard negative is best suited for this class of subject. Of course, the actual exposure will vary according to many prevailing circumstances, but it may be some guide to say that with about two feet of ground glass, with the sitter about two or three feet from it, using a lens working at $f/4.5$, about two and a half seconds will be about right with a fast plate.

In development the highlights should be allowed to attain sufficient density, and no thought need be taken of the shadows. I should also advise a pyro-soda developer, as with it the highlights are not so likely to clog up as when hydro-quinone or such developers are used. The prints may be made in carbon, and transferred to an orange-colored paper, or by any other process that is preferred.

Those who have a fancy for striking and effective portraits a little out of the ordinary run will do well to give this plan a trial. They will find that all the bother of smoke, fumes and flare are done away with, and that they can study and arrange the effect they want with ease and deliberation. The illustrations will, I hope, show how fully the firelight effect is suggested.

Platinum Prints Upon Whatman's Paper

By A. J. Jarman

PHOTOGRAPHIC prints made upon rough surface paper in platinum, no matter whether the color is black or sepia, give an effect not attainable by the various grades of smooth surface paper, especially where the object is a portrait of the head and bust variety, a striped or grained surface somewhat like the surface of the artist's canvas being necessary to secure a good effect. Platinum prints upon such paper as Whatman's hot pressed paper possess a property entirely their own. Prepared paper of this kind is not a commercial article; it must be prepared by those who wish to make prints of exceptional value and beauty. The object of the present article is to give the necessary instruction for preparing such paper, which will enable any one to coat as many sheets as may be necessary for the particular work in hand. By this means the prepared paper will be fresh, and, consequently, give the best result. Whatman's hot pressed drawing paper can be purchased of any artists' color man for about twelve cents a sheet. Six such sheets when each one is cut into four will give two dozen pieces of paper that can be handled conveniently by those who wish to coat them with the specially prepared sensitizer in a very economical manner. The paper, in the first place, must be sized, because of its absorbent character, the sizing being necessary to prevent the absorption of sensitizer into the body of the paper. This must be carried out in the following manner:

Sizing the paper—

Bromide arrowroot 150 grains.

Distilled water 30 ounces.

Mix the arrowroot in a small quantity of cold water, so as to form a thin paste. At the same time attend to the crushing of any lumps, so that the paste is perfectly smooth. Add the remainder of the water, place the whole into a clean enameled saucepan, then bring the whole quantity to boiling point, taking care not to discontinue stirring at any time until the mixture has become quite clear: it must then be poured into a clean, flat dish and the sheets of paper dipped bodily into the hot solution, then turned over, see that there are no air bubbles, then drain from one corner and hang each sheet up to dry away from dust and dirt. After sizing, the remaining arrowroot mixture must be thrown away, as it will not keep, the cost of making up a new mixture being trifling. As soon as the sheets of paper have become dried they must be rolled up upon a clean cardboard tube for a few hours, and after this re-rolled in the reverse way. This will flatten the paper and give an even surface and prevent the sensitizing solution from resting in pools upon the surface. For sensitizing, the following solutions must be made up and kept ready for use, as all the solutions will keep well when made up separately. Any desired quantity can be prepared, and, as a precaution, keep them in amber-colored bottles, the principal solutions being sensitive to light.

Sensitizer.

(A.)

Citrate of Iron and Ammonia.

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| Green crystals | 350 grains. |
| Distilled water | 5 ounces. |

(B.)

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| Chloroplatinite of potassium | 225 grains. |
| Hot distilled water | 5 ounces. |

(C.)

Saturated Solution of Oxalic Acid.

(D.)

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| Nitrate of lead | 300 grains. |
| Hot distilled water | 5 ounces. |

(E.)

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|-----------------------------|------------|
| Chlorate of potassium | 60 grains. |
| Distilled water | 5 ounces. |

(F.)

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| Take of A. solution | 1 ounce. |
| E. solution | 2 drams. |

To use the sensitizing solution economically, a piece of sheet celluloid should be used with a hole cut in the centre the size required upon the sheet of paper, say, 9 inches by 7 or 6 x 8. Now, lay the piece of paper to be sensitized upon a clean sheet of glass, place the celluloid stencil upon the paper and make up the following mixture: One ounce of A., two drams of F., one ounce of B., one dram of D., four drops of C., and four or five drops of a strong solution of gum arabic; stir this mixture with a glass rod and filter through a loose plug of absorbent cotton in a clean, small, glass funnel. Apply this mixture to the centre of the paper (the celluloid stencil acting as a gauge) with a small tuft of absorbent cotton, when the gauge must be carefully removed and the paper suspended to dry in a warm closet; a second coating must be given and the paper dried again; it will then be ready for exposure upon a negative. Coat all the sheets of paper in the same manner; or, if desired, coat the surface of the paper all over for a large print. The printing upon this paper must be carried much further than is the case with ordinary platinum paper; in fact, the printing must be carried on until the surface appears to be overdone. A test print should be first made to determine the exact depth required.

All the operations of mixing the sensitizer, coating the paper and drying must be carried on under an orange-colored light, not necessarily ruby. Care in this respect will prevent any graying in of the whites of the picture.

When the printing is complete the development can be proceeded with in the following way. The developing solution must be made up as follows with hot water and allowed to become cold, or nearly so, the temperature being about 70 or 75 degrees Fahrenheit giving the best result:

Developer.

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| Potassium oxalate | 6½ ounces. |
| Hot water | 45 ounces. |
| Sodium phosphate | 1½ ounces. |
| Oxalic acid | ¼ ounce. |

Place the above in a stoneware crock and pour the 45 ounces of boiling water upon them; stir the mixture well with a glass rod or a clean strip of glass, and when cooled down filter through absorbent cotton twice, when it will be ready for use. To develop, pour about twenty ounces into a clean tray, take one of the printed sheets of paper, hold it by the forefinger and thumb of each hand, dip it boldly into the developer and draw it through, face up, turn it over for a few seconds, then lay it face up and make the development. The image will come up rapidly, of an intense black, but clear and brilliant. As soon as the development is complete, drain the print and place it in a clearing bath of acid made up in the usual way, one ounce of hydrochloric acid (one part to fifty ounces of water). The print must be passed through three such baths and allowed to remain in them for ten minutes, then washed in six changes of water and dried.

Prints made as described dry down a little lighter than the usual platinum print, which is the reverse in drying. The result will be an exceptionally fine print in platinum, with a grained surface, that is not equaled by any platinum paper in the market, with a quality possessed by no other kind of platinum print. Such prints should be capable of commanding a special price to those whose object is to excel in artistic work. Any solution that is left over should be placed aside in an amber-colored bottle until a sufficient quantity has been obtained for further coating, when it can be converted into a sepia sensitizing solution for the same kind of paper by the following addition, made at the time of coating. The following solutions must be made up ready for use:

No. 1.

| | |
|-----------------------------|------------|
| Bichloride of mercury | 30 grains. |
| Hot distilled water | 3 ounces. |

No. 2.

| | |
|--------------------------|-------------|
| Nitrate of uranium | 240 grains. |
| Distilled water | 4 ounces. |

To every four ounces of old platinum solution add two drams of No. 1 and half an ounce of No. 2; also add two drams of strong, clear yellow dextrine mucilage; filter the mixture and coat the paper in just the same way as described for the black. The coating must be done twice. This will produce a rich deposit. The printing for sepia must not be carried quite so far as for the black. As soon as the print has been made development must take place in a hot solution at the temperature of 120 degrees Fahrenheit, the developer being made up of the following:

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|-------------------------|------------|
| Potassium oxalate | 8 ounces. |
| Granulated sugar | 1/2 ounce. |
| Oxalic acid | 60 grains. |
| Hot water | 50 ounces. |

This solution should be filtered and used at the above temperature. The resultant print will be one in perfect sepia when dried down. The best acid-clearing solution for this class of print is made up of:

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| Oxalic acid | 1 ounce. |
| Water | 60 ounces. |

The print must be cleaned in two baths of acid solution; then carefully washed in half a dozen changes of water; then blotted off and dried. Whatman's paper, when treated as above, will become partly transparent and present in appearance wet blotting paper. This entirely disappears when the print becomes dry



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APRIL, 1907

Our Supplement

This month we present a supplement containing twelve negatives and accompanying Mr. Claudy's article on "The Relation of Exposure and Development." Numerous mechanical difficulties were encountered in producing the half-tones, and not less than seven sets were made before we could secure even the cuts we publish. We are not satisfied with the reproductions, but as they were made directly from the negatives, without any manipulation, we trust that they will be sufficiently clear and be of assistance to you in many of your troubles. We doubt if any other photographic magazine has ever taken up the subject in such a thorough manner. Later on we shall take up the subject of defects in negatives and will show half-tone reproductions. The article will run through four or five issues of *THE CAMERA*, and if our readers have negatives showing any peculiarities, will they please favor us with prints so that we can reproduce them and tell our readers the cause of the trouble?

Are Carbon Prints and Platinums Permanent?

This question is constantly looming up threateningly above the photographic horizon, and we would not here call any attention to it otherwise than for the reason of pointing out how ridiculous and absurd are the tests suggested to demonstrate the fugivity of the beautiful results obtained by both these photographic methods of printing.

Quite recently someone revived the old argument in a correspondence to *THE CAMERA* and persisted that silver was superior in permanency. We have no desire to speak adversely of silver prints, believing that if properly made they may be regarded as permanent, but we do protest against the arguments advanced by the writer to settle the question of permanency. He suggested that where a carbon print was submitted to a strong solution of caustic alkali or chloride of lime the image was entirely obliterated. This on the supposition we presume that if the organic base was thus dissolved the permanency was disproved. That the picture should be removed by such a treatment merely proves that they are destructible and has no reference to their permanency. An oil painting may be destroyed by a similar process, but no one dreams of regarding oil paintings as wanting in permanency.

The paper itself upon which the picture is produced may be destroyed, but the permanency of the photograph is not to be impeached on that account. The reproach of photographs has been that they often contain within themselves the elements of destruction or change, that they lose their pristine beauty or fade out all together.

We are willing to admit that some forms of printing are specially liable to rapid deterioration and have lamented that Sepia papers, despite their beauty, are open to suspicion, but the question broadly put amounts to this, are platinums when not subjected to nitro-muriatic acid (which is only a laboratory product) or carbons kept away from caustics, etc., permanent as engravings or paintings? Our answer would be emphatically yes. We see nothing in the chemicals employed and the changes to which they are subjected in manipulation to militate against longevity.

Style and Individuality

It is true that the photographer's style is simply his way of setting forth his ideas with the camera, and though the rules of art in its application to photography are somewhat restricted, there is, nevertheless, scope enough for individual action. Still, there is a tendency to great laxity in photographic style, and photographers are sometimes rash in their attempts at originality of conception and expression, presuming that the correctness or falsity of the idea is dependent upon the power their picture possesses to please some one; asserting that art, like poetry, is addressed to the world at large and not to an especial jury of professional masters; declaring that the technical qualities are only means to the public end. To a great extent this idea is true, and the question, after all, is, how far do pictures, by brush or camera, tend to the object of all the fine arts—enduring pleasure? The public cares little for method; it is the effect produced which exerts in people this enduring pleasure, and perhaps here, too, the public is right. The poet is not restricted to measure of a certain kind in giving utterance to his thoughts, and so we are told that one painter lays on paint so smoothly that no brush-mark is perceptible, while another uses a palette knife or trowel, or it may be a shovel.

Painting, as every one knows, has a tendency to drift away from Nature's simplicity, and hence we are treated to pictures that look as if they had been coated over with a thin whitewash; but any drifting from legitimacy on the part of the photographer lands him, before he knows it, "in shallows" until rescued by some kind, considerate, friendly critic, who shows him how far he is off his chart.

These tricks of sensationalism in photography, with the gloss of novelty upon them, may pass current for a little while in the heat of action for the gold of art. The ruling fad sanctions them and false taste and prejudiced judges demand such pictures, made by such facile artifices, until by and by, through familiarity with what is false, one gets a sort of artistic strabismus or perversion of judgment that prevents his distinguishing what is sane and beautiful.

The votaries of sensationalism having run

the whole gamut of fuzziness and impressionism to the borders of absurdity have struck off just now in the direction of what they call three-color gum-work, and have only succeeded in making a composite abortion of ugliness, falsity of color and incoherence of light and shade, which they would persuade us are worthy of the highest commendation. How any one possessed with normal vision for color could regard them as anything else than execrable it is hard to conceive! "Changed to a worse shape photography could not be."

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The question is from time to time agitated, has the manipulation of the developer upon the exposed plate anything to do in influencing the gradation of the resulting negative?

Until the publication of the Hurter and Driffield paper, in 1870, on the subject, it was generally accepted, though experience frequently contradicted the belief, that the development could modify the character of the negative in the direction of securing gradation. Messrs. Hurter and Driffield at that time considered that they had definitely settled the question by proving that development exercised no control whatever, but later on they admitted that a plate might be rapid to one kind of developer but less so to another, in which case, of course, gradation would be so far under control that it might be modified by choosing an appropriate developer.

Since the time of the publication of their paper a number of new developing agents have had their advent, and it has been demonstrated beyond a doubt that with their use results are obtained equivalent to three times or more increase of sensitiveness as compared with pyro. So that an exposure upon a plate which would under the stimulus of, say, for instance, paramidophenol, develop into a perfectly timed negative might with pyro development very justly be called an under-timed plate. We are inclined to think that even a very faint impact of light, or what is equivalent, a very short exposure, may, if a very energetic reagent be found, be capable of registering its impression as perfectly as if the impact had been normal and the development normal.

All questions relating to technical matters, processes, working instructions, etc., are referred to competent experts in the particular subject referred to, and the utmost is done to insure reliable and practical answers being given.

Correspondents are requested to first state their case and then number each question; they should also write on one side only of the paper, and enclose correct name and address—not necessarily for publication. No attention will be paid to anonymous communications or those only signed with initials.

We do our best in all cases to publish the replies in our next issue following the receipt of the inquiry, but cannot absolutely guarantee this.

All inquiries should be addressed to THE CAMERA, 606-608 Sansom Street, Philadelphia.

No questions answered by post. No prints criticised.

"GLOSSY FINISH."—I have seen many printed post cards that had a heavy glossy finish as if they were burnished, but yet they were printed cards and not photographic. Could you please tell me how it is done? (2) What is the "glacé process" mentioned in "Bromide Enlarging with a Kodak." Eastman Kodak Co.?—A. B. Z.

The usual method of glazing plain cards is to float them on—

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| Borax | 70 grs. |
| Freshly bleached shellac.. | 4 ozs. |
| Water | 20 ozs. |

Boil for half an hour, allow to cool, and add—

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| Denatured alcohol..... | 4 ozs. |
|------------------------|--------|

Allow to stand for a day, and then filter. Some cards are gelatined by coating plate-glass with a 5 per cent. solution of gelatine, allowing to set and then squeegeeing the cards down, allowing to dry and strip. This process is probably what you desire for your needs. The large makers of post cards have them burnished or run through heavy calendering rolls in full sheets by card board or paper makers. This is special and expensive machinery. An ordinary burnisher can be used on small quantities. (2) Squeegee the print to a ferrotype plate, or glass, just the same as you would for solio or any glossy printing out paper.

COPYRIGHTS.—In my town I made a view of an historical subject and, as there is quite a demand for the pictures, I have sold

a number of prints to a local dealer. The other day I received word from a firm making post cards warning me to stop selling or making these prints, as they had copyrighted the subject and all the rights were vested in them. The views were taken from exactly the same point, and the only difference is that I have a few figures in mine, whilst theirs is without figures. They also demand an accounting and damages for all the pictures I have sold. I had not seen their print before, nor did I know of the firm's existence.—J. R. D.

Pay no attention to them. You have just as much right to copyright your own negative, and in fact you state there is a difference in the photos by your reference to the figures, clearly establishing the fact that you have not copied theirs. There is a common impression to the effect that any person registering a copyright in a negative of any ordinary object has the power to prevent any other person from photographing a similar or the same. This is not so; the registration of copyright merely prevents any one from making a negative from the photograph registered by the owner. There is nothing to prevent any person from photographing a church or a landscape from a precisely similar standpoint as that taken up by the person who registers his work.

LINE DRAWINGS.—Please describe the method of making "copy" from a photograph so that a line cut may be made from it instead of a half tone. The process I mean is to use India ink and only have the outline show.—P. A. M.

Indelible India ink should be used so that it does not "run" when the print is subsequently placed in water, and the original on which the drawing is to be made is preferably a bromide print or enlargement. When the drawing is made and the ink has dried, the print is immersed in a solution of

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|-----------------------|----------|
| Copper Sulphate . . . | ½ ounce. |
| Common Salt | ½ ounce. |
| Water to | 1 pint. |

and left there until almost every trace of the photographic image has gone or as far as it will go. Ten minutes immersion will suffice for this. It is then rinsed and placed in an ordinary hypo bath (four ounces of hypo to the pint of water), but the strength is not important. In this it is left for five minutes, after which it is washed in a

few changes of water for half an hour and dried. A print on P.O.P. can be dealt with in the same manner if it is printed and fixed without toning. Care must be taken not to handle the face of the print while it is wet, or the ink may rub off.

VIGNETTES.—Is there any way I can make substantial vignettes so that I can have them in plenty and of a substantial construction? I have used those of paper and with the sliding leaves, but prefer something more economical.—C. T. C.

Paper is certainly cheap enough and you shouldn't growl at the trifle that it costs! In England a vignette is sold made like the il-

lustration shown herewith. White mosquito netting is coated with white varnish or shellac on each layer of the netting, which is cut out before the varnish is applied, four thicknesses of the fabric being used. The vignette is practically indestructible, and, owing to the open mesh of the netting very fine results easily obtained.

REVIVING LEATHER.—Several of my cameras look rather hard and banged. Some time ago you published a remedy for reviving cameras, but I must have mislaid the issue containing the formula. Will you please repeat it?—J. W. T.

We'll not repeat the old formula, but tell of something better. Go to any harness dealer and get a small can of Miller's Harness Dressing. Follow directions, and you'll find it better than the home-made material.



Write the Wollensak Optical Company, 286 Central avenue, Rochester, N. Y., for a copy of their new catalogue. Many novelties are mentioned that will appeal to you and assist you in making the right selection.

Tracing Failures in Intensification

Intensification is less resorted to nowadays than in former times. Photographers are at present better able to judge density in development, because the gelatine plate is now of a more uniform character. With plates made some twenty years back we used to be instructed to carry the development to a much greater degree than appearance of proper density would warrant, because such plates reduced in the fixing, and so judgment was often in error and one feared a tendency to either extreme.

But though intensification is not so much practiced by the modern-day worker, still at times after fixing we may wish we had carried our development just a little further to give snap and energy to our negative. Then it is we look about for some safe and easy method of strengthening. The invariable method is the bichloride of mercury, followed by some agent like ammonia or sulphite of soda to darken the bleached film. There is no objection to the mercurial intensifier, and perhaps it is, after all, as effectual as any; but there is a liability to carelessness in its application which we have frequently found responsible for the total ruin of the plate. Indeed, at one time we intensified our plates with a certain fear and trembling for the result, but after discovering the pitfalls of practice we cast our fears to the winds.

The chief error lies in the insufficient washing of the bleached plate after application of the bichloride. The ordinary inexperienced operator usually is sufficed with five minutes or less washing, whereas an hour would not be excessive. The mercury tans, as it were, the film, and its elimination is too difficult on account of its tardy solubility. But if well washed there is not the least danger of stain; that is, presupposing the plate has been properly fixed and the hypo thoroughly eliminated.



The seventh edition of *La Photographie du Nu* reaches us this month. The book shows much improvement over its predecessors and appeals to those who are admirers of the nude in photography and art students. Further particulars will be found in our advertising pages.

"We stand to make good"—the slogan adopted by The Haloid Company, 7 Commercial street, Rochester, N. Y., will be "made good" to you if you'll send 15 cents for a sample dozen, with developer, of the Platina Developing Paper or Post Cards.

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No matter what developing paper you use or what brand of dry plates, the one developer to fill your wants is Mitchell's "E. Q." Send a postal to Department B Dr. Mitchell's Laboratory, 1016 Cherry street, Philadelphia, and ask for a sample and a liberal one will be sent you free. Of course you must mention THE CAMERA

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A good story is told on page 3 of the Eastman Kodak Company's advertisement, under the caption "Daylight's Assistant." The first two paragraphs tell you in a nutshell why you make such bad interiors and the third paragraph tells you in a few words how to remedy the evil. We are not going to tell you what it is, but want you to look.

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The Moore Push Pin Company, 179 S. Eleventh street, Philadelphia, inform us that they have made up a new lot of their sensible stirring rods. Owing to the demand for the push-pins they were unable to stock ahead on the rods, but now will be able to supply all demands. A sample rod, with two push-pins to hang it up, will be sent you for 10 cents in stamps.

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No matter what camera you may use, unless fitted with the right lens you'll never be content. The triumvirate of Voigtlaender lenses, advertised by the Voigtlaender & Son Optical Company, 127 W. Twenty-third street New York, suit the needs of the most particular, as they represent the best in everything in lens making. Get in touch with the firm and make your wants known.

This month E. B. Meyrowitz, 104 E. Twenty-third street, New York, announces the receipt of his stock of the new Carl Zeiss "Tessar" lens of the speeds of f 3.5 and f 4.5. In focal-plane photography an ultra-rapid lens is indispensable, and the merits of the new "Tessar" should be looked into.

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If you've sixteen different kinds of negatives requiring sixteen different papers to get the results you need, you can get 'em all on Cyko—either rough, or matte, or smooth. Write the makers of the Ansco films, the Anthony & Scovill Company, Binghamton, N. Y., for a Cyko booklet and price list. If you want anything else photographic tell them about it and they'll be glad to quote prices and give full information.

◆

This month we start our gardening work and begin our spring planting, then for the next six months we expect to see things blooming. In garden seeds there are many qualities—good, bad and indifferent. In a Seed's Dry Plate there's but one quality, and a quality unsurpassed. Every plate in the box is guaranteed to produce a perfect result, and that's something that a seedsman cannot guarantee even to a careful worker. Did you ever try a Seed Plate?

◆

We've a correspondent who takes particular delight in making acrostics, and his latest effusion, probably due to appreciation of the goods, is shown here:

ALL GOOD PHOTOGRAPHERS ADMIRE
PRODUCTS

As Agfa products are truly good, why not write the Berlin Aniline Works, 213 Water street, New York, and ask for the Agfa Hand-book. It is full of developing formulæ and useful information.



the $3\frac{1}{4} \times 4\frac{1}{4}$ picture for which the camera is intended and is inclosed by a frame to which is attached the protecting hood. In making an instantaneous or snap-shot exposure only three motions are necessary. One has but to touch a small lever, which automatically throws up the hood; set the mirror by turning the key in the side of the box, when the image may be viewed on the ground-glass through this hood, right-side up, just as it will appear in the picture; and make the exposure at the proper moment by reversing the key, which releases the mirror and at the same time operates the shutter.

"For time exposure, procedure is as simple. The small metal keeper at the side of the key is turned so as to release a small nicked button; the mirror is set in the same manner; the position of the subject determined on, the ground-glass and the exposure key reversed, which releases the mirror and opens the shutter, but the shutter now remains open until the time of the exposure elapses, when a pressure of the button mentioned above closes it, and the exposure is completed.

"There is no complex mechanism to get out of order—parts are few and they are all positive and thoroughly reliable. The camera is loaded with the Premo Film Pack and thus permits the making of different exposures in an incredibly short length of time.

"The Premograph is fitted with the best single achromatic lens obtainable. It weighs 29 ounces and measures $4\frac{1}{8} \times 5\frac{1}{2} \times 5\frac{1}{2}$ inches."

The new 1907 catalogue of the Premo folks—the Rochester Optical Company, Rochester, N. Y.—announces many new things for the year, but the most clever is the new Premograph, which we describe from the catalogue, it is the winner for the year, especially at its low price.

"The Premograph marks a new era in camera construction. It is the only instrument of the reflecting type ever offered at the popular price of \$10.00—a price which places it within the easy reach of every amateur photographer.

"Heretofore such cameras have been made especially for high speed photography, and were necessarily sold at such prices that only the specialist or the wealthy could afford to own one.

"The desirability of such model, however, to the average amateur can hardly be overestimated, for the great advantage of seeing on a ground glass the subject, in the exact size and position which it will assume in the finished picture is obvious.

"The Premograph is as compact and easy to carry as any ordinary $3\frac{1}{4} \times 4\frac{1}{4}$ box camera, but is fitted with a reflecting mirror on which the lens throws an image of the object to be photographed, which is, in turn, reflected on a ground-glass fitted in the top of the box. This glass is the exact size of

The Percy King Light Controller, formerly sold at \$10.00, may now be secured, in all colors, at the low price of \$7.50. The controller is particularly adapted for the needs of the amateur, and transforms a living room into a first-class studio. For particulars, address George Murphy, Inc., 57 E. Ninth street, New York.

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In an advertisement of the new Royal Velox the makers state that it is "printed and developed in the ordinary way," but they fail to state that it produces extraordinary results. A redeveloped Royal Velox print possesses an individual charm that will appeal to everybody. The next time you drop into a Kodak shop ask the man to show you a sample print.

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Every advance in the speed of plates is of distinct advantage to the photographer, but when increased speed is accompanied by increase in the fineness of grain the advantage is many times greater, because finer grain means better detail, value and gradation in both highlights and shadows. It means better negatives every time. If this is so, don't fail to read the advertisement of the Hammer Dry Plate Company in this issue.

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Spring, with its many variations in the weather, is here, and the variations naturally refer to the difficulty in determining the exposure you are going to make. Plates and films represent cash, and your time is worth something, too. Instead of guessing, why not try a Wynne Exposure Meter, made by the Infallible Exposure Meter Company, 81 Keap street, Brooklyn, N. Y.? The first cost is your only investment, and your savings will surprise you.

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Of the many devices placed upon the market for the loading and unloading of dry plates there's but one that is not heavier than the camera itself and is practical—that's the Primera Plate Magazine, made by Burke & James, 118 W. Jackson Boulevard, Chicago. The magazine by its construction does not scratch the plates, is easy to handle and sold at a very low price. With a plate magazine and a developing tank you can even do away with a dark room. Better look into the merits of both.

If you could get your pet landscape negative made into an 8 x 10 print and finished to closely resemble the colors of nature for a dollar, don't you think you want to look into the merits of the process? H. D. Bridle, 913 Arch street, Philadelphia, has a special process for doing the work and will gladly send price list for larger sizes.

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"Kodak Home Portraiture—A Booklet of Suggestion" is the title of the latest Kodak lesson series, and as it is not only instructive and artistic, but also thoroughly practical, being a help to everybody, you should make an immediate request to the Advertising Department, Eastman Kodak Company, Rochester, N. Y., for a copy. One is waiting for you as soon as you say you want it.

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Ralph J. Golsen, the well-known lens man, is about to incorporate the business under the name of Ralph J. Golsen Supply Company, now doing a general photographic supply and lens business at Nos. 58 and 60 Wabash avenue, Chicago. Walter J. Laff-bury, who for many years has been in the employ of Mr. Golsen, and who has a wide acquaintance among photographers, is an officer of the new company, of which Mr. Golsen is president.

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An old friend called upon us this month—the *Photo-Miniature* for January—treating focal-plane photography. As usual, Messrs. Tennant & Ward, the publishers, are over-particular; so much so that the issue is way behind time, but is right up to date regarding the subject-matter, and this being particular is to your advantage—you'll get the best that has ever been written about focal-plane work. The book costs a quarter, from all the dealers or from the publishers, Twenty-second street and Fourth avenue, New York. The best of focal-plane shutters will be found advertised in *THE CAMERA*. The Graflex Focal-Plane Shutter, made by Folmer & Schwing Company, Rochester, N. Y., and the Thornton-Pickard Shutters, sold by Andrew J. Lloyd & Co., 315 Washington street, Boston, Mass. Full descriptive matter will be sent by addressing either concern.

Big things from little guns are the results secured with the Kodak Portrait attachments. They only cost a half a dollar, and make a Brownie, a Kodak, or any other small camera equal in capacity to a big one, and the attachment doesn't interfere with your regular lens. You simply slip it over the lens for use, and when through using it just slip it into your vest pocket. The only thing you've to bother about is to state what Kodak you wish to use it on.

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It does seem strange to say that a platinum print can be made as easily as a blue-print, but this is the fact with the Eastman W. D. Platinum Paper. Simply expose it as you would a blue-print and print it only half the time required for a blue-print, throw it into a tray of hot water for a minute or two, then into a very weak acid bath for a few minutes; then rinse it well, and the trick is done. No other paper is so simple and so effective. It has the usual platinum permanence, and all the dealers sell it.

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On another page we refer to the making of daguerreotypes by employing lantern-slide plates for the positives. To secure the richness and clearness in the highlights recommended, there's no better plate to use than the Cramer Lantern-Slide Plates. They possess so many desirable qualities that we recommend their use generally. You might write the G. Cramer Dry Plate Company, St. Louis, Mo., for their interesting little booklet that will tell you a lot of good things.

A picture is finished when the intention of the artist is best and fully conveyed. Details may be omitted or graphically portrayed and the effect be equally satisfactory to an unbiased spectator, who judges from pure impression of effect. The treatment will vary in the hands of a conscientious photographer possessed of taste and judgment. He will seek to express literal detail in some parts of the picture, while a broader treatment will be reserved for other parts, without in the least weakening the unity or lessening the general artistic expression.

A picture must be an imitation of nature, not the reflection of a gutta serena world in a brass door knob, and *monochrome* photography holds its status in art by *fee simple* of its faithful representation of nature in whatever phase she is presented. It must, therefore, take the proper channel in art by which alone it can be rendered effective.

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Plates as Films

The comparative merits of plates and films seems to deserve more thorough investigation than has thus far been given to them. As regards quality of the fresh samples of each, there seems to be no variation whatever, but the vital question, "How about keeping virtues?" Will plates preserve their integrity longer than films on celluloid?

Our personal experience may be of some worth in the discussion. As far as films of moderate or low sensitiveness is concerned, there seems to be no appreciable deterioration in films a year or eighteen months old. No tendency to veil over was shown.

With films, however, of high degree of sensitiveness, deterioration was quite manifest in some samples not more than eight or nine months back. Their development showed inclination to fog unless considerable bromide was administered.

While giving full attention to softness and harmony of values in photographic work it must not be forgotten that we should avoid with studious care weakness and flatness, for nothing is more undesirable than work without pluck, and this we are able to do by securing some point or points of deep shadow or objects of great local depth in themselves, which will clear up our work and give crispness and brilliancy to it.

It might be retorted, however, how are we to secure such if none such exist in the subject before us? The only answer is such a subject, then, is not worthy of selection.

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There is considerable misunderstanding as to the properties of lenses in general, especially concerning depth of focus and curvature of field. Our modern type of lens is certainly advantageous in giving equality of definition over a flat field, but such a quality is not always desirable. Very frequently an ordinary medium angle doublet like the old type portable symmetric might accomplish more. Where depth of focus is the desideratum in the picture a curvature of field is better than flatness, and a concentric lens tested in such a case will fall short of what is expected. If the subject to be used is flat, then it is an advantage to use a lens with a flat field, but where the subject approaches the camera on both sides and at the top and the bottom, as in most interior views, the lens of curved field is superior.

A distant subject, where the objects are equally in focus, is best accomplished with lens giving flat field, and where the subject consists of a series of flat surfaces, such as a series of terraces or of a practically flat expanse of country, then a flat field is just what is most desirable, because it means the getting of all the objects along any line parallel to the horizon in equally good definition, and as the new type works with larger aperture it is of advantage to use such a lens where rapidity of exposure is desirable, so it is well to consider in the taking of a subject its character and to adapt the lens accordingly, and not to expect too much of a lens which is paramount in the performance of its specialty.

Unless solutions are somewhat the same temperature of the room during cold weather the negative is apt to be lacking in detail as well as density. Those who still use pyro as a developer find that it is more liable to stain the film during cold weather than in the summer season. In fact, the dark room should be kept at least up to 70 degrees, so that there may be no retarding of action. Negatives developed with moderately warm solutions are always more brilliant looking than when cold water is used. Printing during cold weather also requires attention. It is difficult to secure a rich print from a rather dense negative. Thin negatives, that is to say, those having full gradations, always make better prints. The toning of the prints also requires attention to temperature. We generally keep solutions cold for gelatine papers, but even they should have the bath not below 70 degrees. The washing of the print, before toning, should be in luke warm water. If the water is cold, say 45 degrees, one cannot get rich tones.

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One of the prevailing errors of those who attempt the so-called artistic effects of photography is that they are merely impressed by a certain style of illumination, and, in order to get away as far as possible from what their own good common sense has led them hitherto to effect by normal lighting, they succeed only in exaggerating that effect. Effect, after all, is not the chief aim and object of art, nor is rendition of literal truth; that is excessive realism. Art is the endeavor to create for oneself a production of what is beautiful in nature. Why, therefore, should the lovely complexion of a young girl be made to look blotchy and lack lustrous as one sees it in salon pictures on exhibition walls? Why not, instead of destroying that beauty, try to increase or to present it most favorably? If one would only remember that the human head is a ball he would not make it look as if it were a mere disk. To express that rotundity is to express what is beautiful and at the same time true. A human head properly and artistically presented should have the further portion in deeper shadow than the near portion, and not show in the photograph as one flat, undifferentiated smudge.

We have no especial predilection for what in lieu of a more significant name is called three-color gum bichromate work. Gum bichromate prints in monochrome are amongst the most expressive forms of photographic printing, and lend themselves well and admirably to the individual taste; but when the photographer undertakes to ape oil painting by torturing a print by an inexorable process of sundry muddy color baths and debauches a lovely, well graduated and artistically composed negative till it presents the appearance of poor, dauby lithograph, we cry "Hold, enough!"

It has been our misfortune to be compelled to associate with a coterie of patients possessed with this unfortunate mania for three-color work, and we have marveled how men who heretofore have given abundant evidence that they possessed "the art and faculty divine" of making beautiful work in one or the other of the legitimate means of expression in photography could suffer their sense of harmony of color to be so outraged as to produce such veritable abortions. Yet these same men would look with compassion on any one who would venture from a pure taste to express admiration of a beautiful chromo or a first-class lithograph.

The powerful effect of light and shade and the tender development of the delicacies of form by gradation of middle tint, leave the photographer nothing more to do than to take just what he sees before him.

In many of our stately mansions where one is called to photograph the salons, one often laments the lack of taste or want of judgment displayed in arrangement and illumination of sculpture, for often they are mere articles of furniture, placed with a view to the symmetry of the room and without any regard to the effect of light and shade. If their beauty and expression be not displayed all that can be seen is so much marble, representing the expenditure of so much wealth for mere ostentation. An inferior work of art would artistically answer the purpose as furniture equally as well. If sculpture be not properly lighted, in such a manner as to draw forth its beauty, that which is of a superior class, the finest examples of modern art, seem to the public eye little better than those of a

more common description. But when properly lighted the exquisite superiority of the former becomes manifest. Just as in music, the finest old Cremona, worth a thousand dollars or more, in the hands of a common performer seems no better than a dollar fiddle. But let an able master of the instrument but draw his bow across the strings the difference will be perceived immediately by even the most uncultivated ear which has natural perceptions.

In testing a lens there is one point necessary to consider that is not always regarded with the attention that it demands. That is, the quality of the ground-glass upon which the image made by the lens is brought to a focus. The tester ought to examine first of all the grain in the ground-glass screen. The granularity should be of a degree of fineness as will admit of magnification by a glass. It would not suffice to oil the glass, thereby making it more translucent; this may lighten up the image on the ground-glass but will in no way get rid of the coarseness; the grain itself must be fine. Next, he must find out whether the surface is precisely in the same plane as that which the sensitive plate will occupy when fixed in position.

This determination of equality of distance from the lens cannot be accurately ascertained by the method which is generally pursued of pushing in a foot-rule through the opening in the front board and noting how far it goes and then trying in the same way a plate in the plate-holder. A more accurate way consists in laying a rule across the focusing glass frame and inserting between the edge of the rule and the surface of the glass a slip of card-board, cut in the form of a wedge, and noting the distance it can be inserted, marking with a pencil at the place where it touches the straight rule. Next, insert a glass plate in the plate-holder and go through the same operation of measurement.

If the point of contact of the wedge is the same in both measurements, then for all practical purposes the two planes are coincident.

A difference of a hundredth part of an inch between the position of the ground-glass and sensitive plate may thus be detected. This accuracy may be necessary for copying that is to be subsequently used for an enlargement.

A Simple Method of Stripping Films

The instructions given in various journals for stripping films from the glass of cracked negatives generally involve the use of hydrofluoric acid, chrome alum and other objectionable chemicals. The following method has no such objection, and has in my hands proved perfectly successful:

Support the broken negative, film side up, on the edge of the table and run the back of a knife round the edges of the glass, so as to cut away any of the film which may cling to the extreme edge and insure its easy separation at a later stage. Then soak the negative for four or five hours in a 10 per cent. solution of formalin (for a quarter-plate negative use $\frac{1}{2}$ oz. commercial formalin to 5 oz. of water).

Transfer the negative to a large, deep dish or basin of cold water, and holding it in one hand, film side up, use the fingers of the other hand to gently brush up the edge of the film at one end of the negative. Separate the film all along the line of the edge and then in the same way gradually advance the line of separation down the length of the plate. All this is done under water, and the film will be found to roll off most easily and float free in the water.

Do not separate the film at one side much in advance of the other, but as far as possible keep the line of separation parallel with the edge of the negative at which the start was made. Do not be tempted to pull the film, or it will stretch out of shape and possibly tear. Do not hurry the last half inch—there's great temptation to do so—or tears are almost certain to occur. Pay particular attention to the separation at the edges as you advance. The motion of the fingers should be very gentle, and much resemble the action they would have in tickling the palm of one hand with the fingers of the other.

When free, remove the broken glass and insert into the dish a clean glass plate. Roll the film back onto this, right side up, and arrange it in position; then, holding

both together at the edges of the top corners, lift them out of the dish. Here and there the film will perhaps lie in little cockles; these should be very gently squeezed flat with a wet roller. When satisfied that the film is nice and flat and in position on the glass, transfer the whole to a dish of methylated spirit, where let them remain fifteen minutes. Then lift them gently out, and if any cockles still remain they may be again rolled flat, wetting the roller first in the spirit.

At any stage up to this the film tends to shift about on the glass, but it may be easily replaced (under water or spirit, as the case may be).

Now wave the glass with the film on it gently up and down in the air, and in a few seconds both will be quite dry and the film firmly adherent to the glass.

Of course, if an unexposed, fixed and washed negative plate be used as the new support, adhesion will probably be still more firm, but I have not tried it, as the clean glass answered perfectly well.

The formalin prevents undue swelling of the film, and I have had no difficulty in getting all the picture onto a glass plate of the same size as the original negative, the film projecting over the edge no more than 1-32 inch all round.—*The Amateur Photographer* (London).

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A Printing Hint

There are so few easy methods of making satisfactory-looking picture post cards from quarter-plate and smaller negatives that I venture to put forward the following idea, which yields pleasing results without any of the laborious double-border printings that need so much care and time.

The only materials needed are the opaque wrapping-papers in which plates are sent out, and some printing-out post cards—matt for preference.

Having decided on the shape of mask most suitable to the negative selected, take one of the wrapping-papers and tear a hole

in the centre of it, roughly following the shape and size desired and carefully preserving entire the piece torn out.

It is important to note that the opening must be torn without doubling the paper in two, as if any two of the sides are in the least symmetrical, it considerably detracts from the effect.

Now adjust your torn mask over the negative and print out; next, remove printed post card from the frame, cover the printed part with the piece you have torn out of the mask, which will very slightly overlap all round on account of the "burr" of the tear; replace in the frame on a clean glass, and, holding the frame in the sun for a few seconds, make a graduated tint from corner to corner or end to end of the post card by slowly moving a sheet of black paper backwards and forwards over the print, always keeping one extreme end or corner completely covered and leaving the opposite one free to blacken. Care must be taken not to carry the blackening too far, as a fairly deep tint is all that is necessary.

There are many small variations of this printing "dodge" which will suggest themselves as one works, and many really charming little pictures may be obtained from otherwise worthless negatives by a judicious tearing of the mask to suppress some ugly or superfluous object.

Needless to say, the method is applicable to prints other than post cards, and suits almost any subject that is improved by masking or vignetting.—*The Photographic Monthly*.



Negative Numbering

A pantagraph printing frame that will remove all the difficulty of neatly numbering negatives in reverse can easily be made. I got the suggestion from a French journal, *Le Photo-Revue*. The sketch shows the pantagraph as made by myself from four penny flat foot-rules and a frame of plain oak moulding. The pantagraph, A B B C, is attached at A to a traveler D D, which works along one end of the frame in which the negative is laid face upward. The joints, B B B B, all work freely. At C is the guiding style (a French wire nail) and at E the writing style (the point of a shoemaker's awl). The guiding style works in letters

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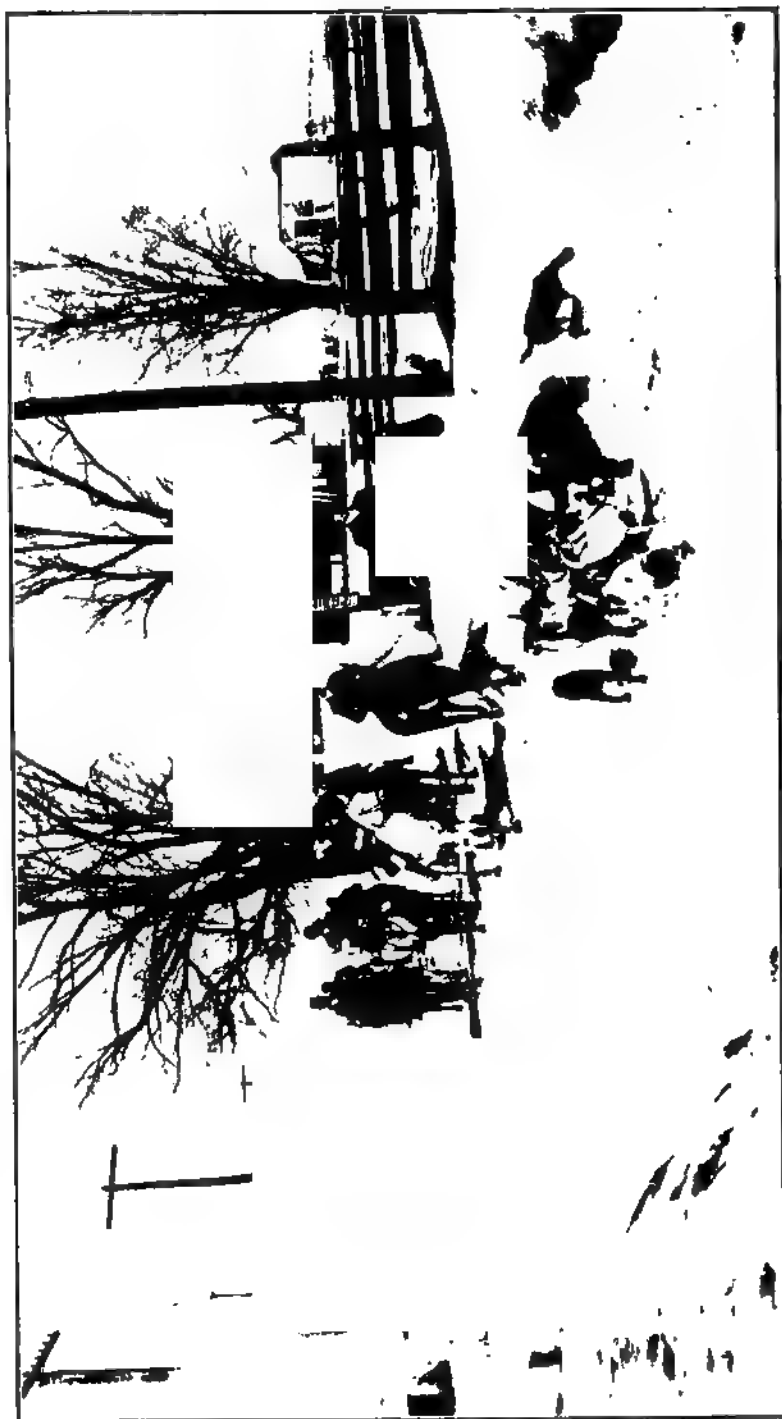
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Balance—Part III

By H. R. POORE

AN appreciation of the movement of a picture—that natural course given to it in the progress of lines or attractive points which carry the eye through it—is the simple first cause in the artist's effort to effect balance. With this idea primal, perfunctory effort toward unity ceases. The artist becomes a musician, playing his melody with appropriate accent or restraint. Following the emotional or natural tendency of his theme, he but governs pedal or stop, and is credited with the performance in the degree of taste displayed in these minor things.

The true musician can get more from a pianola than the unknowing one.

Negatively, the apprehension of the *movement* of our picture is useful in clearing up what might often prove mystifying, namely, the introduction or elimination of a given item. The landscapist puts in a figure or takes him out with little or no change to the unity of his picture, and perhaps may argue from such an experience that the same might be done in any part of the picture. On the contrary, a little experimentation would soon retire him upon the safety lines of balance, and then, if he were a thinking man, it might come to him that so long as his figure or figures occurred on the line of natural movement they became no more than accented notes in his melody, disturbing this in no whit, but the rather enforcing it within the compass of the governing principle, and upon the no less vital quality of art personality.

Figures may come and go in pictures of extended perspective and we may welcome them or dismiss them. It is because their presence or disappearance is upon or away from those parts which may receive accent. Even though they may become principal and dominate the whole scheme of the picture, it will be found upon removal that they were added to a substructure which had in itself

"ON THE CLIFF"

MYRA A. WIGGINS

all the necessary requirements of complete structure; it was no more than ornamenting the capitals and copings and gilding the dome.

Unbalance, or putting an accent out of its place, is like gilding the side entrance.

In the delightful little picture "On the Cliff," all the apparent interest of subject is placed upon one side, and the close-clipping enthusiast and his fashionable framemaker might decide to make a tall panel of this and cut off the right side. In so doing they would commit no sin against unity, for the left side is complete. If, however, something besides this is allowed, it must contain the requirement of balance which the subject demands. Our vision is led in perspective to the right distance and traverses a long range in finding that item of attraction, the glint of light upon the sea. Anywhere along the direct or curvilinear line connecting the extremes of this picture figures could occur without impairing balance, the only objection being their slight counter interest. Imagine, however, a figure climbing out of the picture over the bank on the left or directly in line with these figures on the opposite side. Proceeding with the postulates, "a black unit on white or a white unit on black has more attraction

than the same on gray" appeals to us as an axiom, yet the picture of "The Storm at Broeck" is worthy our study as an illustration of it. The placement of the first boat in relief against the lightest part of the sky endows it with a force which overaccents it. Standing at the entrance of the picture it stops us with its bold assertion and puts in a counter claim with the interesting sky beyond. Were this cut off, the picture would improve by simplification, for the hulk, thrust at us in the foreground, would then be principal. A better sacrifice would be this foreground item itself, important as it may seem. Such arrangement defeats so fine a principle as climax. The speaker commences in stentorian tones scarcely before the audience is ready, and everything which follows is said in a weaker key, either in repetition or as unessential.

So majestic a storm in its progression and form is well fitted to command our lasting attention. That the sky overhangs the sea and shore and that boats lie there should not distract us from this impressive vision, but only prove themselves appropriate concomitants, recognized as are gloves and an open front at an evening function, things appropriate to their surroundings.

With the foreground boat out of it the leading lines and single hulk are all that are necessary, and would exist with truer meaning in this more impressive simplicity.

THE VIKINGS

To realize the relative force of black in contrast with white or with gray a comparison of these two boats with their surroundings is sufficient.

A practical use of such apprehension would provoke a reversal of the whole sky in this picture, which would then bring the foreground boat into lesser relief, subdue its strident tone, and allow the second boat, an item set well into the picture, to receive the dignifying accent in its explicit relief against white.

Another example of this principle is shown in the strong composition entitled "Vikings." The key figure of this, by its relief against white, leaves no doubt of dominance though smaller and further removed than the figure of like gesture directly before us.

The small kite moves without trouble, supporting easily its long and heavy tail. The swing of this picture, carrying the eye through it, is so forceful and continued that the restriction of its sides is unnoticed, so sharply are we drawn away from them. It takes us in its rapid zigzag from the cramped foreground and opens out a wide horizon before we are aware of the narrow angle of vision through which this tragedy has been viewed.

The picture is further a fine example of balance by oppositional lines, and the curve of the sail a splendid line of inc'usion.

The eighth postulate, "the value of a unit is also dependent upon the size of the space contrasted with it," may find exposition from the picture of boats on the shore.

The suggested removal of the first boat, with the twofold purpose of disposing of the contrast and clearing the entrance, would endow the second with the importance of controlling a greater area. It would, then, be the one and only elevation in a scene directing us chiefly to the idea of extension. By this distinction, therefore, its quality is made manifest through contrast, and by its isolation it claims the larger field. This is the dividend which simplicity never fails to declare. It is the compensation always awaiting a sacrifice.

This case may well stand to illustrate the final postulate, namely, an item in the foreground has less weight than the same in the distance. It is for the reason that the foreground object can scarce get into the movement of the

THE ENCHANTED WOOD

T. MILLIE DOW

composition. One is rather inclined to look over the foreground and catch the thread beyond. At best, foreground space is only introductory.

Of these two boats the smaller has more to do with the composition of the picture than the larger. The like is true of the Vikings. The smaller figure occupying the focal centre weighs more in the calculation than the one directly before us.

The question of how much to allow in our picture is one especially taxing to an artist's judgment out of doors.

Nature is so prolific! Testing her possibilities with a view-metre and its sliding scale, one should always find somewhere within its compass the elements of balance *and add thereto*.

In the charming fantasy, by John Millie Dow, "The Enchanted Wood," a subject immediately satisfying to one by the completeness of its poise, the fairy and the moon in perfect balance across the central group of trees, we find the necessary elements for a complete composition far within the limits of the artist's conception.



T. MILLIE DOW

THE ENCHANTED WOOD



PHOTO BY
MARY CARNELL
PHILA.

Let us suppose the canvas was of a different shape, the addition of extra space applied *behind* the figure. This jars us, because it is not in sympathy with the movement or natural direction the eye takes by hint of the action of the figure. In following the leading lines of the shore, however, we find this in time doubles on itself, uniting with the moon, at length getting our vision across the medial line and in opposition with the figure. Were the background to this figure reversed in its line we would know for a surety that the addition to the original panel was a mistake. When, however, more is added on the left, the sense of balance again enters into the foreground, and we accept this last as complete.



Latitude in Bromide Paper and the Control of Contrast by Exposure

By C. H. Claudy



ONCE in a while an otherwise worthless negative is of some good to some one. Here, for instance, I have utilized a negative otherwise only fit for the scrap heap to make five prints, on which I am hanging my present subject, like a coat upon a rusty nail. Not much good, the nail as a nail, but plenty strong to support the weight. Not much good, the prints, as prints, or the negative from which they were made, as a negative, but amply good to illustrate the points I want to make. In fact, the poor negative was selected for that very reason. It is underexposed, a little overdeveloped (it was *not* developed in a tank!), and has not been properly fixed, part of the unreduced silver still remaining in the lower right-hand corner.

This negative was taken on a bright sunshiny day, at about eleven o'clock in the morning, with a stop of F 8 and an exposure of one-one-hundredth of a second, and, as might have been expected, the exposure is deficient in the shadows. No matter how you print it you get a poor result. But the results are so entirely different, varying with the degree of exposure, that they seem worth your attention, as they undoubtedly were worth mine.

In this demonstration I made no attempt to vary results by varying the strength or temperature of the developer, preferring to leave those factors for future discussion. There is ample material here for thinking good hard thoughts in the variations made in the resulting prints by varying the exposure alone. The paper used was a bromide paper, and the developer was diluted M. Q. at the usual strength used for bromide work, at a normal temperature of 70° Fahr. The exposures were all made through a projection lantern, because this method gave the best control of the time and an assurance of absolute uniformity in the strength of the light and the distance of the paper from the light.

The exposures, at a stop in the projection lens of F 16, ranged from fifteen seconds to nine minutes! I do not really expect you to believe this unless you have faith enough in me to believe me if I told you black was white, and even

then I would forgive your doubts. But it is surely a simple matter for you to try it for yourself—if not with a lantern, then by contact, and you will see that I have told only the truth. Please note—I do not say that you can give, by contact and direct light, an exposure of fifteen seconds and then one of nine minutes—but that if your shortest exposure which will give you a print be multiplied by thirty-six, you can give thirty-six times said shortest exposure and get a print no worse than my longest exposure. Your shortest, by contact, may be one second, when your longest would be thirty-six seconds, and the proportional exposures would be the same as mine.

Let us consider these prints in the order in which they were exposed. In No. 1, which had fifteen seconds, the unfixed portion of the negative shows very plainly in the lower right-hand corner, as a fog or veil, or sunstruck part of the picture; it is light and underprinted. Yet the ear of the beast is black and the shadows in his fur are dark, showing that this print was developed as far as it ought to go. There are scarcely any details in the floor of the cage, and if I did not call your attention to it you would probably not notice that there is the edge of his bath-tub showing to the extreme right near the bottom of the print. As in all prints from negatives which are improperly made, certain portions print correctly. The detail in the paws is good in this print, and the sun-flecked fur shows up in spots as well as might be expected. The original color of the print (which, of course, does not show in the reproduction) is a good black and white.

Now look at No. 2. This print had just double the time of the first one—thirty seconds, and is, I should say, a normal print from the negative. The unfixed portion shows veiling still, but not so pronounced as in the first place. The detail in the paws is darker and a bit obscured, but the detail on the floor of the cage comes out better and the edge of the bath-tub shows plainly. The dark parts of the picture are no darker than in the first place. The two prints have been developed for an equal length of time in proportion; of course, in actual seconds No. 2 came out quicker than No. 1, otherwise the black portions would be blacker. But in proportion to their exposure each received a normal development. The effect of the increased exposure is noticeable, not only in the increased detail in the high-lights, but in the smothering of faint lighting, as in the line of light down the side of the bear's head, which in No. 2 is fainter and less pronounced than in No. 1.

Now for No. 3. This had ten times the exposure of No. 1 and five times the exposure of No. 2—two and one-half minutes, in other words. This is, by all odds, the best print of the lot, although anything but a normal print. But I am speaking of the finished appearance of the picture and not of technic, for it is finished prints in which we deal and for the perfection of which we aim and not their mere technical correctness. Here the shadow of an outside awning in the left lower corner comes out properly as it ought to come, the shadows of the bars on the concrete floor of the cage are plain and distinct, and the out-of-focus background is as dark as it was in the original subject. Also the halation about the fuzzy treetops has almost entirely disappeared. The detail in the animal is more or less obscured, there is decidedly less contrast between



No. 1—15 seconds exposure

No. 4—7½ seconds exposure

No. 3—2½ minutes exposure

No. 2—30 seconds exposure

No. 5—3 minutes exposure

PHOTO BY
MARY CARNELL
PHILA.

the bar of shadow across Bruin's nose and the sunlit nose itself, but the general effect is that of a flesh and blood bear in a cage and not a stuffed animal sitting on the snow with "I-don't-know-what" for a background. The color of the print is a sort of muddy brown-black, rather disagreeable but tolerable.

No. 4 had seven-and-one-half minutes time—thirty times as much as No. 1, fifteen times as much as No. 2 and three times No. 3. Here we enter the realm of extreme overexposure, and the high-light details disappear in their delicate gradations, but the details in the extreme high-lights come out better and better as in the concrete floor and the sky through the leaves. But the paws are mere black splotches, the fur is almost solid black in parts and the line of light down his face has about disappeared. No one would think this picture was taken in bright sunlight, but, then, no photographer would ever think it was so grossly overexposed were he not told. No one could have been more surprised than I was when I found the amount of overtiming I could give to the paper and not have it block up entirely. So I tried twice more, as shown in No. 5, which had nine minutes, or thirty-six times No. 1, eighteen times No. 2, three and six-tenths times No. 3, and one and one-fifth times No. 4, and once again not shown, which had one hundred times the exposure of No. 1, or twenty-five minutes, but which was quite hopeless from the start.

The tones of Nos. 4 and 5 are muddy green-browns, disagreeable and impossible from the technical standpoint. But please note, and note carefully, that there is still some little detail in the print, even in the shaggy fur, and that although blocked up badly, it is still clear enough for him who reads as he runs to know that there is detail there to be found if hunted for.

The shadow of the awning in the lower left-hand corner is no darker here than in No. 3, which shows that No. 5 had the same proportional development, and that the darkening is due to exposure and not overdevelopment—a very important point, as you will see in a moment.

Now, what is there to be learned in a practical way from these five poor prints from a poor negative?

First, that if, with a poor negative, an average operator can make such enormous differences in contrast by exposure alone, as shown between Nos. 1 and 5, the same operator ought to be able to make much more successful work out of a good negative in altering the contrasts between high-light and shadow by exposure alone. This is true. It is the principal reason why I chose a poor negative to illustrate this series. Had I chosen a good one, and altered contrast, those of you who read and whose bromide experience is limited, might have argued that either I was altering contrasts for the sake of the argument and not for the sake of the print, or that I was showing off a superior skill, which they had not. As a matter of fact, I have no skill in bromide or other photographic work one little bit out of the ordinary; I have had more experience than some, and have learned and always enjoy learning new and odd bits of photographic lore; and as I have said before, if my readers learn as much from what I write as I do in gathering the material from which to write, they are rapidly becoming used to the idea that nothing you think you know

is really known, and that your most cherished photographic maxims may be turned solemnly upside down at a day's notice!

Bromide paper is like a plate in respect to its gradations. It has a certain thickness of emulsion, and can be regarded as a succession of fine layers of chemicals. When the exposure in the deepest shadow goes through to the last layer, and the detail in the highest light touches only the first layer, then we have the greatest range of tones of which the paper is capable. When the range of tones in the negative is less than the range of layers in the paper (which is nearly always the case in a good normal negative) we have latitude in exposure, since, if the number of layers is fifty, and the number of tones in the negative is ten, we can have the deepest shadow at layer eleven and the highest high-light at layer one, or, we can have the deepest shadow at fifty and

INSPECTION

S. B. WARK

the highest high-light at forty, and still have the same range of contrasts, although the relative tone of the print will vary from light to dark. But when we exceed this last exposure, then the deepest shadow still stays at fifty and the highest high-light comes to forty-five, perhaps, and the range of contrast is cut down—the gradations merge one into the other. And if sufficient exposure is given, development yields but a uniform gray or black color to the paper; everything, shadows and high-lights alike, have affected all the chemical silver salt in the emulsion all the way through to the paper.

You will see without being told that this side of the question is but one side—the exposure side—and that development has a great deal to do with the subject, both from a standpoint of resulting color and of resulting depth of print. Also you must not confuse contrasts made or unmade by varying length of exposure with exposures of varying length which are made the same by varying the distance from the light, since this is another matter altogether and dependent on a physical principle of the penetrative power of light, which, with its intensity, decreases as the square of the distance and not at all upon the chemical variations caused by actual alterations in the amount of silver reduced.

It would be both interesting and instructive if you who read would try, by contact or otherwise, the alteration in the contrasts of some hard negative by overprinting and normal development, and would send your results to the

editor. That he would be glad to give them space his publishing of this invitation is a sufficient evidence. And, if you aim at bromide proficiency, there is nothing you can do to gain that skill which will help you more than experiments like these.

But there is one hard feature connected with this knowledge. If you, like me, once prided yourself on your ability to guess the correct exposure for bromide work, your pride has tumbled so far you can no longer see it. With a latitude of 3600 per cent., it seems to me any one ought to guess near enough to make a passable bromide print from almost anything. Pride can rear its head again if one thinks of proper color, since only the right exposure will give the best color, but for average work, where color is little thought of, these prints should be sufficient proof that our boasted skill is but guessing within wide limits, any one of which will serve.

THE SHADOW

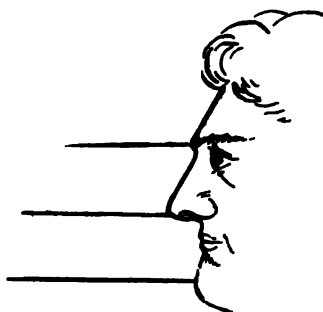
NEW PHOTOGRAPHIC SOCIETY
BERLIN

The above picture, from the *Australian Photographic Journal*, produces such a novel and attractive style of lighting we publish it with the hope that our many readers will try for the same effect.

Lighting and Posing Profiles

By Felix Raymer

PRACTICALLY speaking, there are but few different effects of light to be made of profiles. It is also true there are but few profiles good enough to justify an operator in making an exposure of them. In nearly every case where an operator is requested by the subject to "make a profile view" of his or her face the resulting negative is a disappointing one. We are all prone to want good profiles. The first novel written (by Adam, I suppose) mentioned the heroine as "having the most exquisitely excruciatingly agonizing profile that ever was," and all other novels since that time have faithfully recorded the fact that its heroine is as good on the profile as the one written by Adam (that is, if he did such a thing). As a matter of fact, however, there are very few subjects we have that really present as good an impression when viewed in profile as from some other point of vantage. This being true, as every operator will testify, it makes one all the more desirous of getting profile pictures by way of variety.



I show in connection with this article four different effects of light of different subjects, all of whom have fairly good profiles. First of all we must know what goes to make a good profile. Personally, I like a profile with rather a high forehead and one in which, if we were to divide it into three parts, these parts would be of nearly the same measurement. Refer to the outline profile used herewith and my meaning will be clear. A slight variation of either of these parts would not deter me in making a profile view of the subject, but any great difference would.

Now, refer to the illustrations and we will take them in rotation. No. 1 is known to operators as a "broad effect," and to secure this effect the subject should be placed under one end of the skylight and out in the room the same distance the light measures in height. If the opening in the light is from its lowest point to its highest (nine feet), place the subject nine feet out from it in the room. Now station the camera just half that distance from the light. It matters not how large nor how small the light, follow this plan, and always have the camera half the distance from the light the subject is placed, running forward or backward to get the "size head" desired. Next the operator should take his stand directly in front of the camera and have the subject turn away

from the light until the eye on the shadow side of the face disappears from view. This will give the effect of light shown in No. 1. The "pose" of the head may be chosen to better suit each face. If the nose is rather longer than is absolutely correct, raise the head somewhat. If it is shorter, lower the head. If the chin is too short, lower the head; if too long, *vice versa*.

No. 2. Bring the subject forward under the light until she is placed direct'y under its centre. This allows light to come in from behind her. She should be placed the same distance from the light that it measures in size, but further under it than for No. 1. Next the operator should take his stand at a point half the distance from the light the subject is placed and have her turn to the light until the shadow from the nose and the shadow on the cheek separate. As soon as this occurs have her hold the position and move the camera away from the light around on the shadow side of the subject until the eye on the light side cannot be seen; the effect of this lighting is shown in No. 2. However, it may be necessary to use a white head screen to soften the high lights; if so, place it so all the light falling on the subject passes through it.

No. 3. Place the subject at the same point as for No. 2. The operator should take his stand at the same distance from the light as the subject is placed. Next have the subject turn from the light until all of the light leaves

No. 2

RAYMER

the nose. Do not have her turn any further than just where the nose goes into shadow. The camera should be placed at the station where the eye on the far side of the face is just out of view.

No. 4 is almost the same as No. 3 except the subject should be turned from the light until the light leaves the entire face, and the camera is then moved further around from the light or until the eye on the far side of the face is just out of sight.

There is a vast difference in the duration of exposure on these different effects of light, and it is just here where so many make failures. If No. 1 should require one second exposure, No. 2 will require three seconds, No. 3 will require four seconds and No. 4 five seconds. The reason for this is the lessening of light surface in each succeeding effect. No. 1 shows the entire surface in light, whilst No. 4 shows the entire surface in shadow. It is the same in portrait exposures as in architecture. If we are on the light side of a house the exposure is much shorter than for the shadow side. Where this difference in exposure is made the developer should remain normal, for the exposures have been made normal.

These profile effects can be made by any source of light, a window being as good as any skylight. Follow the directions as given whether the light be single, double, or perpendicular slant or window.

An Inexpensive Device for Enlarging

By H. A. Roberts

SOME years ago a small drawing of a device to illuminate a negative by gaslight for making lantern slides was published in one of the photographic magazines. A year's use of it was so satisfactory as to lead to experiments in enlarging. It was found entirely practical to make satisfactory bromide enlargements, and enlarged negatives in a reasonably short time.

The arrangement has several advantages over a daylight apparatus for an amateur. Perhaps the greatest are its small cost, the fact that it can be used at any time, night or day, and, as the illumination is always uniform, there is little waste of material from errors in exposure.

For convenience in description, it is assumed that one has a dark-room, (preferably) a long focus 4 x 5 camera and desires enlargements 8 x 10 in size. Enlargements on both paper and glass can as easily be made to practically any size—governed only by the limit of one's pocket-book and the size of the dark-room.

The illuminating device could be used with an enlarging camera, or even with an ordinary camera, for some of the purposes.

No. 4

RAYMER

There have been similar devices advertised for sale in English magazines, but I have never seen anything offered here.

The first step is to cut a hole in the dark-room wall 5 inches long and 4 inches high. At each side of the opening, and perhaps half an inch from it, fasten a piece of $\frac{7}{8}$ -inch pine 10 inches long and an inch or more in width (a, a, Figure 2). These strips should have a groove in which a wooden slide with a 4 x 5 cut-out in the centre may be moved up and down (b, Figure 2). This slide should be arranged to hold a 4 x 5 negative firmly. When adjusted so the negative comes opposite the hole in the wall, a wire nail or brad, driven in the edge of the slide just over the top of either side piece, will keep it in proper place.

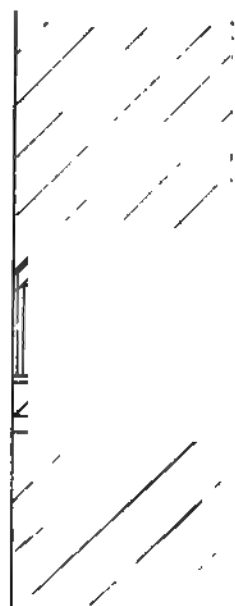
Below the two strips a shelf must be made to hold the gaslights. It should be so placed that the centre of the mantles is the same height as the centre of the hole in the wall. It is necessary to make the shelf as open as possible to allow an ample supply of air around the lights. Therefore, it need be only wide enough to fasten the gaspipe on, and should set out 2 or 3 inches from the wall (a, a, Figure 1). Have the shelf brackets $6\frac{1}{2}$ or 7 inches long on top and placed not more than $7\frac{1}{2}$ inches apart. The glass holding the reflecting sheet, and also the one protecting the negative (both of which will be spoken of later), can then rest on them.

Then take two pieces of bright sheet tin 10 or 12 inches high and perhaps 15 inches long. Bend up at right angles 1 inch of one end of each piece and fasten the bent up end to the outside of the upright strips with tacks or brads (c, Figure 2).

The two sheets should then be sprung around (as shown by dotted lines, Figure 2), overlapped and fastened, so as to leave a circular well at each end about 6 inches in diameter. The front, or reflecting surface, should be reasonably straight for 10 or 12 inches.

For the reflecting surface use a 10 x 12 light of glass on which is pasted by the edges a corresponding piece of white paper, preferably drawing or water-color paper. This glass may rest on the shelf holding the gaslights, and should be parallel with the slide holding the negative and about 6 inches from it. It can be held to the tin at each upper corner by a couple of clothespins (c, c, Figure 1).

The lights should next receive attention. These should be of the incandescent gas kind. A convenient arrangement is a straight piece of small pipe with tees at such a distance that the lights will each occupy the centre of the wells at either side of the reflecting sheet. It seems to do no harm if some of the direct light from the lamps does strike the negative, so long as it does not come within the angle of view of the lens. In fact, the direct light strengthens the illumination without apparently disturbing its evenness. The larger and more powerful the burners the shorter the exposure. The mantles should be those which give the whitest light. The bright tins almost surrounding each light act as reflectors, throwing a strong light on the reflecting sheet. The



- a - Gas burner shelf & bracket
- b - Camera
- c - Reflecting sheet
- d - Shelf or run
- e - Sliding easel

FIG. 1

small pipe carrying the burners may be attached to a convenient gas-burner by means of a rubber tube.

Turning our attention now to the part inside the dark-room, remove back from camera and place camera against the opening in the walls (Figure 1), arranging a light, tight joint by fastening strips to the wall and close to the camera. The edges of the hole and the strips should be painted dead black.

On the shelf or run holding the camera (d, Figure 1), which shelf should be about $2\frac{1}{2}$ inches lower than the bottom of the camera, arrange a sliding perpendicular support or easel (e, Figure 1), against which an 8 x 10 printing frame (f, Figure 1) may be placed. It is desirable to have some means of fastening this easel at any point. A couple of upright strips on the easel (either side of the printing frame) will insure replacing the frame in the same position each time. The printing frame should contain a piece of clear glass and a sheet of white paper. The use of the frame does away with the necessity of pinning the bromide paper to the easel, and also forms a holder for enlarged negatives. By means of the rising, falling and sliding front of the camera the

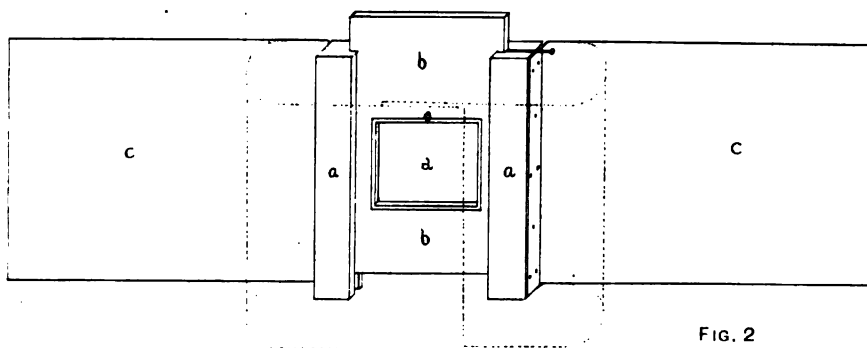


FIG. 2

enlargement can easily be centred and focused on the white paper in the frame, so that it is only necessary to take out the white paper and substitute the bromide. When everything is complete, light the burners and put a negative in the slide with the film towards the camera. Just here is an important point. In front of the slide containing the negative stand a light of glass—a clean 8 x 10 will do—perhaps an inch from the negative. This is to protect the negative from the heat, which would otherwise sometimes peel the film from the glass. With the protecting glass the negative will not get dangerously hot.

Go into the dark-room and close the door. By means of the focusing screw on the camera focus the image on the white paper. The size is easily adjusted by moving the easel nearer to or further from the lens. If bromide paper is to be used it can be put into the printing frame next to the glass and exposure made. In making an enlarged negative it is desirable to remove the glass. In focusing, provision should be made for this. My practice is to slip another sheet of glass between the frame and the support. When this and the glass and paper in the frame are removed and the dry plate (face out) put in the frame it will be in correct focus.

When only a part of a negative is to be enlarged, it can easily be centred on the printing frame by the adjustments of the camera and the negative slide.

As to exposure, with an anastigmat it is not necessary to stop down. At F 6.8 bromide paper takes from 30 seconds for a thin negative to several minutes for a dense one. Very dense negatives are impracticable, the light not being strong enough to penetrate them in any reasonable time.

A dry plate takes from 5 seconds to perhaps 45 seconds, depending upon the density of the transparency used. Lantern slides can also be made perfectly by making a box to fit between the camera and the opening in the wall, as it sometimes requires longer draw than the camera has. The exposure varies from 10 seconds to 1 minute.

In developing enlarged plates, carry development farther than apparently necessary, as the plates seem to lose more density in the fixing bath than the same brand of plate would if exposed out of doors. The ordinary dry plate makes an excellent transparency for enlarging if it and the enlarged negative are *fully* developed with *contrast* developer.



Outdoor Portraiture With a Screen

By A. W. Weston

PORTRAITURE in the open air, where there is a natural excess of top and front light, is often doomed to failure through the want of proper shade, yet much can be done to remedy a bad lighting by simple means; even a second background, erected at the side of the sitter, or a curtain hanging slantwise over wire supports, will give an appreciable amount of shade to the face.

For those who desire a stronger lighting, to be varied at will, the arrangement shown in Figure 1 is excellent for head and shoulder portraits, and can

be controlled by the operator like a small studio. It is cheap and simple in construction, for it may be made at the outside cost of about a dollar without any great difficulty.

A glance at Figure 2 shows the framework, which is constructed of three canes, A A A, 60 inches long, joined end to end with cord, the two ends having hooks attached in like manner, B B.

A spot must be chosen for the screen having a wall at the back; thus, two staples driven in the wall, about 6 feet 3 inches from the ground and 60 inches apart, receive the hooks and also serve to support the background. At the other two corners of the framework, C C, a long loop of thick cord is attached, and this loops over a hook in the post, E, which is placed about ten feet from the wall.

This framework carries the top blind. The side blind is run separately on a cord, D, just long enough to go right round the framework; two hooks attached to the ends hook on the staples, and two small hooks fixed to the framework at C C support the cord at these points.

The side curtain, which is about four yards long, must be black (cheap, thin material), and should reach about halfway down to the ground. But the top blind must not cut off too much light, and should, therefore, be of a lighter color and partly translucent. Of course, both blinds are fitted with small rings. This completes the description of the screen, and Figures 1 and 2 will make it clear. Such an arrangement gives a great variety of lighting, according to the use of the top and side blind; and one using it for the first time, after struggling with uncontrolled daylight, will be surprised at its possibilities.

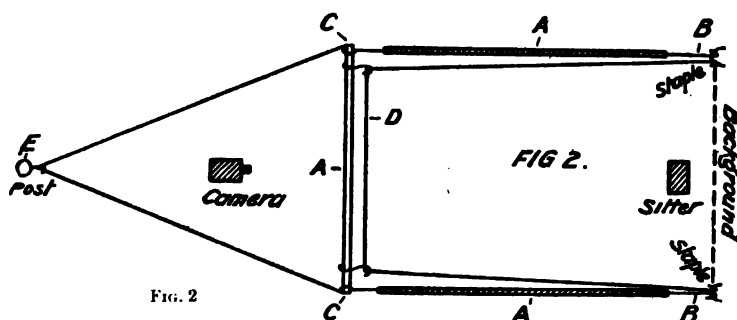


FIG. 2

Pull the curtain around to its fullest extent, and there is a fine profile lighting; draw it back a little and we have a softer effect; push back the top blind and more top light is the result; and so one may go on altering the lighting to suit each exposure.

When not in use the whole screen folds up very neatly, the side blind being folded up separately, while the top blind is run up together, the canes folded over it, and the whole tied up neatly with a cord. It then takes up no more room than a background, and there is nothing left to tell the tale but the two staples in the wall and the pole.

A word must be said about focusing and making the exposure. If the side curtain is in the way when arranged for a strong lighting, it is best to leave its

arrangement until after focusing, when it will perhaps be necessary to attach a cord to the corners of the framework and bring it over the back of the camera, thus keeping the curtain from the lens, but this is only necessary when a strong lighting is used and the camera is some distance from the sitter (see Figure 1).

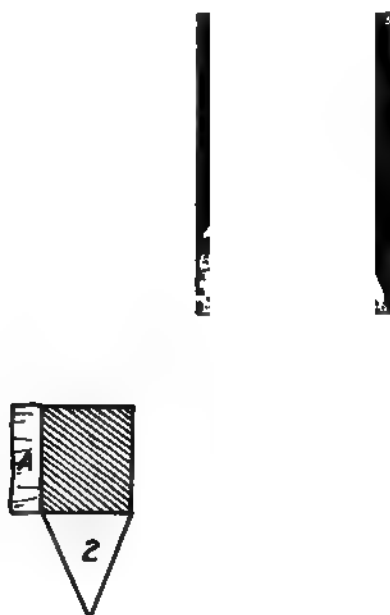


FIG. 3.—Each portrait is made with the arrangement of blind sketched immediately below it.

The diagrams below the examples of lighting (Figure 3) explain the arrangement of the side blind, A. In all the top blind was fully spread, and only the side blind touched. Of course, the lighting can be altered a little by moving the sitter. To get more top light the sitter may be moved nearer to the edge of the screen, but all these examples were taken with the sitter in about the same position.—*The Photographic Monthly*.

Unsuspected Causes of Defects

Whenever our advice is asked in regard to photographic materials which are alleged to give rise to defects beyond the control of the user our first recommendation is that a supply of the defective material be sent to some friend or colleague of the complainant who has an establishment totally distinct from that in which the unfavorable results have been obtained. The quite separate use of the plates or papers by one who understands their treatment has frequently led to the production of perfectly faultless results, and proof positive has been afterwards afforded that the cause of all the trouble was a minor matter lying unsuspected under the worker's very nose. A case in point which

was settled in this way may be mentioned. A photographer had recently obtained a stock of plates every negative from which was more or less marked with black spots; sometimes with one or two only, but on other occasions the spots appeared in numbers. After endless speculations a brother worker in another town, to whom some of the plates were sent, returned a batch of negatives without a single defect of the kind. The cause, which was thus located at home, eventually turned out to be a dusting brush which at some previous time had been used for sensitizing with an iron solution, and had retained minute particles of iron salt, which, in conjunction with the pyro developer, had led to the plague of spots.—*The British Journal of Photography*.



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MAY, 1907

Jamestown Exposition

April 20, 1907.

Editor of THE CAMERA,
Philadelphia, Pa.

Dear Sir:

*In reply to your letter of the 16th inst.,
regarding cameras, I beg to say that the usual
license fee of 50 cents will be charged on all
cameras up to and including a 4 x 5, which is
the largest that can be brought into the grounds.*

*This rate will be \$1.50 a week, or \$4.00
per month.*

Yours very truly,

S. E. SNYDER,
Chief of Exploitation.

Just as we were about to mail our April
issue we were unfortunate enough to run
up against a postal regulation, owing to the
supplement of negatives accompanying Mr.
Claudy's article not being permissible and
violating the rules of the Postoffice regard-
ing second-class matter. Although a few of
the magazines were mailed before the viola-
tion was discovered, we had to recall the
edition and remove the supplement before
we could remail. The supplements were sent

to our subscribers in a separate envelope,
and should your copy not have reached you,
please advise us by return mail and we will
send you one. As we have but a few on
hand it will be necessary to make your re-
quest promptly.

Some five years ago we were poisoned
with Metol, and although we thought we
were immune and handled the Metol in our
work at that time, we apparently got rid of
the sores or eruptions caused by its use.
Since then we have only used Metol with
our hands protected by rubber gloves, yet,
about twice a year, spring and fall, the same
eruption appears and lasts for fully a
month. We should like, not only for our
own satisfaction, but for our readers as
well, if others, who have had the same diffi-
culty, will tell us about it, and, if possible,
give the remedy to stop the trouble; natu-
rally we want to publish a practical remedy
to relieve the difficulty.

One of our contemporaries has taken
special delight in becoming a critic regard-
ing some of the mishaps that one will make
in speech or writing. No writer is infalli-
ble, nor do we pretend to be, but what are
we to think of the expression "One of our
co-respondents in — says?" Is this in-
fallible gentleman running a "divorce mill,"
or will he claim that the hyphen is a missing
letter that the usual intelligent linotype
operator hit in mistake? We are advising
this noble editor to move from his green-
house—the roof is rather attractive to stone
throwers. Probably we will send him a
nice big rock the next time we give him
prominence.

(Certain English paper please copy.)

In connection with the question of grada-
tion as influenced by development, the
thought occurs, has the mechanical action
of the developer any agency upon the char-
acter of the negative? or, in other words,
will the rocking of the plate in the solution
produce a different deposit from that ef-
fected by repose of the liquid?

In practice we are taught to keep the
developer in motion so as to avoid uneven-
ness and stain in the negative. Every ele-
mentary instruction book will insist upon

this rocking practice as an absolute necessity. Yet has it not occurred to you that there may be a difference between violent and calm methods of manipulation? Not to go very deep into the subject, we might just pause here to direct you to an examination of negatives made by tank development and to ask you to note how much more harmonious the resulting negative is over that evolved with the lightning express method. Now, tank development is of necessity one in which the development is absolutely at rest.

It will be observed that in the process of development there is a natural tendency to aggregation, and wherever the light has acted most the silver is most readily precipitated, and hence in under-exposed plates the lights acquire greater density before imperfectly illuminated details are evolved at all. If the plate is kept still the deposit of silver is gradually formed and the weak lights get a better portion before the high lights pack it all up for themselves.

The lights which are brought out first having secured the precipitation of the silver in immediate contact find a constant fresh supply, which in turn is precipitated upon the parts which, by virtue of the greater action of light, have the greater attraction for it. The lights thus go on rapidly aggregating the deposit of silver.

In the meanwhile, the minor lights, consisting of shadows, suffer in two ways; first they are robbed of the silver which should have gone to build them up, and in the next place the high lights, quickly acquiring density, the development stops before the shadows have been properly evolved.

Keeping the plate in violent action lends to intensity of high-lights over shadows, and so gives contrast. Keeping the plate still should, therefore, tend to give more value to half-tones and shadows and so produce a more even negative.

✱

The intelligent amateur is always anxious to know the full capacity of his lens, so that he may be prepared when it is required to do special work. In the first place we would recommend him, instead of discarding his old-fashioned Ross or Dallmeyer, to compare its working qualities with the new sort of lenses and not to let his enthusiasm run away with his better judgment. To

work rapidly and to cover a large field with an almost full opening is, of course, a desideratum, but then, does rapidity compensate for the sacrifice the enthusiast makes in selling all that he has to possess it? Will not his old-fashioned lens work with greater depth of focus, even if it does work slower? And when depth of focus is essential or paramount to area-covering power, will not his old Ross or Dallmeyer fill the bill just as well or even better? The diameter of the circle of illumination indicates the dimensions of the plate, of which the lens will admit. The degree of definition of the borders of the circular area of illumination, of course, varies, as the aperture, being more accurate and sharply defined, the smaller the diaphragm. The diameter of the circle of illumination is made equal to the diagonal of the plate to be used, and so falls somewhat beyond the largest measurement of the plate. Thus, for instance, with an eight by ten plate the longest side being ten inches, if we require the covering capacity of the lens to be in terms of diagonal of the rectangle it will demand a diagonal of about thirteen inches, thus allowing, even with the full opening of the lens, sufficient latitude for accurate definition at the margins of the plate. This latitude, which is thus allowed the lens may sometimes enable the photographer to call on his lens for a little more area of dimensions, even with a full aperture, or to go even further with a small stop. Then if he wished to make, with a plate 5 by 12, a sort of panoramic view, he would find that his diagonal, being about thirteen inches, while the diagonal of allowance falls a little within thirteen, he is with his old-fashioned lens stepping on rather dangerous ground, though he will get there safely with a small stop. Here we acknowledge the superiority of the modern lens, but then this superior advantage is only when the subject is pretty much in one plane. Where there are a variety of planes to be made sharp the old type lens is quite equal to the new. To accomplish depth of focus with the new we are just as much obliged to stop down, and so the duration of exposure is increased. This may sound pretty much like a "Philister," but we are speaking a good word for the old type without detracting from the merits of the new.

All questions relating to technical matters, processes, working instructions, etc., are referred to competent experts in the particular subject referred to, and the utmost is done to insure reliable and practical answers being given.

Correspondents are requested to first state their case and then number each question; they should also write on one side only of the paper, and enclose correct name and address—not necessarily for publication. No attention will be paid to anonymous communications or those only signed with initials.

We do our best in all cases to publish the replies in our next issue following the receipt of the inquiry, but cannot absolutely guarantee this.

All inquiries should be addressed to THE CAMERA, 606-608 Sansom Street, Philadelphia.

No questions answered by post. No prints criticised.

FLASH POWDER.—Should like to know the formula of a good and rapid flashlight powder that could be exploded with a paper cap. Also if same can be carried mixed.
—A. F.

We never give formulæ for flash powders. Any of the standard makes may be exploded with paper caps, provided something like a Kodak Flash Pistol or the "Spredlite" Flash Lamp be used. The "Agfa" Blitzlight is one of the safest to use and carry around.

PLATINUMS ON FABRICS.—I wish to make some platinum prints on linen and similar fabrics. Will you kindly state how to proceed?—J. W. N.

You must make up two solutions, and it is advisable to keep them in the dark. They are composed as follows:

A.—Potassic-Chloro platinite 60 grains
Distilled Water..... 4 drams
B.—Ferric Oxalate.....60 grains
Distilled Water..... 4 drams

The foregoing solutions are sufficient to properly coat fifteen feet of paper, or rather less fabric; they must be mixed in equal parts immediately before use, as they will not retain their good qualities for longer than a few minutes. The fabric should be placed on a piece of clean glass, and the sensitizers should be well brushed into it over the part you wish to print. It will give a yellow tint to the fabric, and, directly the sensitizing is complete, the fabric should

be rapidly dried at about two feet distance from an open fire—of course in a semi-darkened room. When dry, printing may be proceeded with at once, or the prepared fabric can be stored in a calcium tube in order to keep it perfectly dry. Care must be taken to avoid overheating the fabric, otherwise it will yield foggy prints. Perhaps the best and simplest developer for this sensitizer is composed as follows:

Sodium Citrate.....120 grains
Water 1 ounce

The articles (after printing) may be either floated or dipped bodily into the developer, which may be used either cold, warm or hot—but preferably hot. The image (which is barely visible after printing) will flash out intensely black immediately it is immersed in the developer. As soon as it is fully developed it should be transferred to a mixture of hydrochloric acid and water—one part of the former to sixty parts of the latter. After a few minutes it should be transferred to a second and third similar bath, and must then be well washed in clean water.

REDUCING AND REDEVELOPING PRINTS.—1. Can you kindly give me a formula for reducing overtimed Special Portrait Velox Paper which has been developed with Metol-Hydrochinone and fixed with an acid hypo? 2. I would also like a formula for redeveloping Velox to sepia tone.—L. C. D. G.

1. The reduced prints are not very satisfactory. Make 10 per cent. solutions of A Iodine in Alcohol; B Potass Cyanide in Water. Use 15 minims A; 30 minims B; Water, 1 oz. Use after fixing and washing and wash prints well after reducing. 2. The following is the regular Velox redeveloper:

No. 1.
Water12 oz.
Ferricyanide Potassium.....½ oz.

No. 2.
Water12 oz.
Bromide Potassium.....½ oz.

Take equal parts No. 1 and No. 2 and one drop strong Aqua Ammonia to each two ounces solution. Bleach and redevelop in
Water12 oz.
Sulphide Soda 1 oz.

Dilute 1 ounce with 5 to 9 oz of water.

BLACK LINE PRINTS.—Please state formula for sensitizing paper to make black lines on a white ground.—H. D'O., Jr.

| | |
|-----------------------------|-----------|
| Gum Arabic | 59 grains |
| Tartaric Acid | 8 grains |
| Salt | 36 grains |
| Ferric Chloride (lump)..... | 59 grains |
| Ferric Sulphate | 39 grains |
| Distilled Water | 1 ounce |

Dissolve the gum in the water, made hot, and add the salts in above order. The best developer is

| | |
|----------------------|-----------|
| Oxalic Acid | 2 grains |
| Gallic Acid | 12 grains |
| Distilled Water..... | 2 ounces |

TANK DEVELOPERS.—Please give formulæ for Glycin, for Edinol and for Hydrochinone tank developers for twenty minutes to one hour.—P. H. S.

GLYCIN-STOCK SOLUTION.

| | |
|--|------------|
| Glycin | 120 grains |
| Sulphide of Soda, dried (Anhydrous)* | 360 grains |
| Sulphite of Soda, dried (Anhydrous)* | 360 grains |
| Water | 35 ounces |

For twenty-minute developer; temperature between 65 and 70 degrees. To each part of stock solution add three parts water. For one-hour developer; temperature between 65 and 70 degrees. To each part of stock solution add nine parts water.

EDINOL-STOCK SOLUTION.

| | |
|---|------------|
| Edinol | 145 grains |
| Sulphite of Soda, dried (Anhydrous)* | 300 grains |
| Carbonate of Soda, dried (Anhydrous)* | 300 grains |
| Water | 40 ounces |

For twenty-minute development; temperature between 65 and 80 degrees. To each part of stock solution add three parts water. For one-hour development; temperature between 65 and 70 degrees. To each part of stock solution add eight parts water.

HYDROCHINONE-STOCK SOLUTION.

| | |
|--|------------|
| Hydrochinone | 90 grains |
| Sodium Sulphite, dried (Anhydrous)* | 400 grains |
| Sodium Carbonate, dried (Anhydrous)* | 390 grains |
| Water | 30 ounces |

For twenty-minute development; temperature between 65 and 70 degrees. To each part of stock solution add three parts water.

*Pure Anhydrous sodas are recommended. If crystals are used double the quantity specified.

PYRO-FERROCYANIDE.—Can you give me the formula for pyro developer with ferrocyanide of potassium? 2. I understand that it is better than the regular pyro; is this true? —N. C. W.

| | |
|-------------------------------|-----------|
| A.—Water | 32 ounces |
| Potassium Ferrocyanide..... | 3 ounces |
| Sodium Carbonate (crystals).. | 3 ounces |
| Potassium Carbonate (dry).. | 3 ounces |
| B.—Water | 9 ounces |
| Sodium Sulphite..... | 3 ounces |
| Pyro | 1 ounce |

The sodium sulphite should first be dissolved in the water, and enough citric acid should be added to render the solution neutral or very slightly acid; the pyro should then be added. For use, take of A, 1 dram; B, 20 to 30 minims; water to make up 1 ounce.

2. We have never tried the formula and cannot say, but do not believe that the "regular" pyro can be improved upon.

DUPLICATE NEGATIVES.—To make a duplicate of a negative, will you please tell me how to proceed?—P. R. E.

To make duplicate negatives, first a glass positive must be made. For this purpose, if the positive is to be made by contact in the printing frame, a slow plate, such as Seed 23 or Cramer Anchor, is the best. If the copying is to be done in the camera, then a plate of ordinary speed is better adapted for the purpose. In working by contact, artificial light may be used precisely as when making a lantern slide. When the copy is made in the camera the clear, unobstructed light from the sky or light reflected from a sheet of white cardboard will be more convenient. The exposure and development should be such that, while the positive is perfectly free from fog, as shown by the edges being clear, there must be a slight deposit even in the highest lights. The shadows must not be opaque, but must show detail throughout. If the first is not perfect, a second and a third must be made. When a perfect result has been obtained a negative must be made in the same way.

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The Folmer & Schwing Co., Rochester, N. Y., have made quite a reduction in the price of the Graflex Focal Plane Shutter without reducing the quality of the product. The complete new list will be found in our advertising pages.

Taylor, Taylor & Hobson, Ltd., 1135 Broadway, New York, wish to tell you about the Cooke Lenses, and they want you to have a copy of *Helps to Photographers*, a little book with a mountain of information in it.

✽

There's one thing that you'll not be "stuck on" if you try it, and yet you'll be "stuck" on it if you use it, because it will "stick" when other stick stuff fails. Kodak Dry Mounting Tissue has now become a standard, and if you've never tried it and its easy way of mounting a print, you are the loser. The packages are sold at a very low price and by all dealers.

✽

The advocates of tank development should send to Burke & James, Chicago, for a copy of their new booklet, "Daylight Automatic Development of Negatives." The book tells a lot about tank developing, and as they can be had free from your dealer or the Burke & James people there is no reason for you being without a copy. The following excerpt from a recent letter will also be of interest: "We have purchased the camera factory of K. Nelson, who was the largest manufacturer of cameras in Chicago. This purchase includes the stock, fixtures, machinery, good-will, patents, etc. We are now operating the factory and turning out the goods as heretofore manufactured by K. Nelson, the quality of which is known to many of your readers. We have recently taken over the sole selling agency and are manufacturing the Wager Patent Exposure Scales and Definition Scales. In a few days we shall place upon the market the new Ingento Color Filter. To users of orthochromatic plates and those desiring full color values they will prove superior to anything on the market. We shall be pleased to send your readers full descriptive matter of our various products, including Etchine, the single solution sensitizer, if they will make the request to us."

Doesn't it sound funny to make a combination of a Brownie picture and a Daguerreotype? A reader of THE CAMERA sent us in a specimen picture made by contact on a Seed's Lantern Slide Plate from a portrait taken with a Brownie Camera according to our instructions for making easy Daguerreotypes published last month. This is another good use that a Kodak or a Brownie may be put to and at the same time produce novel results.

✽

The first Aristo School of Photography, held in New York City April 2d to 5th, was a decided success. During the four days and evening session 900 photographers visited the building occupied by Geo. Murphy, Inc., at 57 East Ninth street.

The school was under the management of F. L. Cornell, who made the sittings and demonstrated the Aristo Lamp, and Frank Haslett, who demonstrated Aristo Paper, making prints from negatives made under the Lamp, manipulating prints in their different necessary handling; also made enlargements on the new Folmer & Schwing Enlarging Camera, used in conjunction with the Aristo Lamp, without the aid of Condensing Lenses. Talks on lighting, developing, demonstrating of the Aristo Paper, Bromide Enlargements, posing under the light were given with great success.

The programme was as follows:

Talk on Lighting, Sittings under Aristo Lamp, Developing, Aristo Paper Demonstration, Lighting and Posing, Printing by Aristo Lamp, Talk on Retouching, Developing, Paper Demonstrations, Talk on Business Methods

In the manipulations given by the School the Century Company's Studio Outfit was used, the Folmer & Schwing Enlarging Camera, the Percy King Light Controller, the Bausch & Lomb Unar Portrait Lens and the 3A Ross Portrait Lens.

After considerable preparation the C. P. Goerz American Optical Co., 52 Union Square, New York, announce that the stock of the new XL Sector Shutter is now complete and orders promptly filled. The new Sector has so many advantages that you should know of that a request for descriptive matter should be made at once.

✽

The new catalogue of the Century Camera Company, Rochester, N. Y., this year is certainly a work of art, and the many good things noted, combined with the mention of the numerous "Century" labor-saving devices, should cause you to make an immediate request for a copy. Every device for the improvement in picture-taking will be found in the 1907 Century models.

✽

Of late, the greatest number of questions we receive are those requesting formulæ for the various developers suitable for tank developing. This clearly proves, to our satisfaction, that the majority of photographers realize its efficiency and the good results generally obtained. Considering the low cost of the tanks, don't you think you should be the next recruit? If you have a Kodak, and you want something that is easier than taking the pictures, a Kodak Tank Developer should be your next purchase. The only objection one can possibly have to them is that they are too easy and make good negatives instead of the failures you formerly experienced.

✽

A new lens, known as the Series IC "Tessar," working with apertures of F 3.5 and F 4.5, is now on the market. The new series embodies all the characteristics of the "Tessar" F 6.3 together with greater speed; in fact, the new objective is an anastigmat with the speed of a portrait lens. The new F 4.5 is suitable for ultra-rapid instantaneous photography and focal plane shutter work, while the "Tessar" F 3.5 is designed for cinematograph work and particularly for portraiture. A new Zeiss catalogue is also announced, which contains full information regarding the new lens and will be mailed on request by E. B. Meyrowitz, 104 East Twenty-third street, New York City, who is the sole United States agent for the firm of Carl Zeiss, of Jena, Germany.

The Mirmont Photo Paper Co., Glendale, Brooklyn, N. Y., report an unusual demand for their product since they established their factory in the East. Just a year ago they were practically wiped out in the San Francisco disaster, and, phoenix like, they have more than risen and are making an enviable reputation for the Mirmont products. Write for particulars from the factory.

✽

The Eastman Kodak Co., Rochester, N. Y., have use for a number of good film negatives made with Kodaks. All classes of subjects are suitable and quite a liberal price is paid for the negatives selected. If you have some good ones, send them to the Advertising Department of the Eastman Kodak Co., and only state that they are at their disposal. In a few days those films not available are returned, also with a check for the accepted ones.

✽

Last month we were a little premature in making the announcement that the price of the Percy King Light Controller was to be \$7.50. Geo. Murphy, Inc., 57 East Ninth street, New York, the makers, advise us that, owing to the many improvements in the controller, it is impossible to make the price any lower than \$10, list. We consider that the controller would be cheap at ten times the price asked for it. Write for data if you are interested.

✽

We beg to announce that our New York offices now occupy the entire second floor of the building at No. 40 East Twenty-first street, between Broadway and Fourth avenue, where a complete sample line of our photographic staples and specialties will be carried in stock for the inspection of our customers. We will also carry in stock for delivery Ansco Cameras, Ansco Films and Cyko Paper, to assist dealers in filling orders promptly for these popular goods.

We also advise you that we have opened a branch office at No. 407 North Broadway, St. Louis, Mo. (Mermod & Jaccard Building), for the distribution of Ansco Cameras, Cyko Paper and Ansco Films. A full line of all the Anthony & Scovill products is carried in stock.

THE ANTHONY & SCOVILL Co.,
Binghamton, N. Y.

Enlarging Without Condensers

An apparatus for enlarging or reducing without the use of condensing lenses is something which we know will readily commend itself to every worker in photography.

Folmer & Schwing Company, of Rochester, N. Y., have just perfected what is known as the Graphic Enlarging and Reducing Camera. The camera is designed for enlarging and reducing work on either plates or bromide paper, and is so constructed that it may be fastened to the side of the dark room, projecting the enlargement or reduction on a movable easel in the dark room.

The size of the enlargement is regulated by the focal length of the objective used and by the distance the easel is placed from the camera. The negative to be enlarged or reduced is illuminated by artificial light from the outside of the dark room with a reflecting cone projecting through the side of the dark room, receiving the light from the lamp with the reflection from the sides of the cone. In this way the entire negative is evenly illuminated and enlargements or reductions to any size desired may be secured.

The bed of the camera is telescopic in form, permitting of a liberal extension when necessary, or the contraction of the bed allowing of the use of short focus lenses, as the case may require.

A carrier with full set of nested spring finger kits is fitted into the camera. The carrier is manipulated from the inside of the dark room and all sizes of negatives from the smallest up to the full capacity of the camera may be enlarged or reduced. The side-shifting movement of this carrier, in conjunction with the rising and falling movement of front of camera, also permits of any part of the negative being enlarged or reduced.

The No. 1 Graphic Enlarging and Reducing Camera will take all size negatives up to and including the 5x7 size (\$28.00); the No. 2 all size negatives up to and including the 8x10 size (\$35.00), and the No. 3 all size negatives up to and including the 11x14, size (\$45.00). Prices include one Graphic Enlarging and Reducing Camera, with reflecting cone, negative carrier with full set of nested spring finger kits and three pieces of fine diffusing ground-glass. A descriptive illustrated circular is issued, and may be had by writing to Folmer & Schwing Company, Rochester, N. Y., or to your dealer.

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The Spider's Web as a Negative

To one on a vacation and interested in photography the good part of a day may be spent in collecting and printing cobwebs. The process is easy. Let him get the farmer's potato sprayer, put in it some "sizing japan" thinned with turpentine and colored from a terra-cotta tube. Then let him take some old window glass, or a few cleaned negatives, and go in quest of a clear web with a good centre. He will find it on an outbuilding or fence in the open. When found, let him spray it, then bring up a dry plate of glass behind it and lift it from its moorings. In a couple of hours the web will be dry and so hard that the plate can be washed without any injury to the web. From plates thus secured he may make prints to his heart's content. To make combination pictures, put the plate over any clear negative and print through both of them. For printing the webs themselves, blue-print paper may be used to advantage, inasmuch as it simplifies the work.

In finer experiments I have tried dyeing the web, spraying it with a tincture to make it opaque, then taking a fresh damp negative which had previously been exposed to the light and washed in a hypo bath, to lift it. The filaments of the web were so fine, however, that though perfectly preserved, it was impossible to make a print from it. So that for photographs I will stick to the enameling process—that is, to spraying with "sizing japan." The japan is the same as used for gold lettering—*Scientific American*.

✽

Keep grit off the eye of your lens and the lens of your eye.

P. A. of America

The Executive Committee of the P. A. of A. met in Dayton, Ohio, January 22d, to arrange for the twenty-seventh annual convention. All officers were present as follows: C. J. Vandeventer, president; C. L. Lewis, first vice-president; A. T. Proctor, second vice-president; Frank R. Barrows, treasurer; Frank W. Medlar, secretary.

The secretary reported having received \$2,800.50 during the year 1906, which was paid over to Treasurer Barrows. The treasurer reported a balance on hand January 1, 1907, \$4,371.74.

It was decided to hold the twenty-seventh annual convention of this association August 6th to 9th, inclusive, in the Steele Educational Building, Dayton, O.

It was decided to offer no prizes the coming year, but to continue the Salon exhibit along the lines of the last convention, it being understood, however, that the twenty-five pictures so selected are not to be rated; all honors to rest equally on pictures selected. A certificate of award to be given to all receiving Salon honors.

In compliance with a resolution passed at Niagara Falls Convention, the association offer \$100.00 in gold to be awarded to the manufacturer or dealer exhibiting the best invention, appliance, formula or process not heretofore shown at a national convention, and in addition thereto will give \$50.00 in gold to the inventor of such, as the case may be, provided he be other than the party exhibiting same.

It was decided that \$200.00 be placed at the disposal of the entertainment committee.

The board ordered that official ballot slips should be used in the election of officers.

RULES AND REGULATIONS.

One—Exhibits may be framed or unframed, at the discretion of the exhibitor.

Two—Exhibits shall consist of two classes, Salon and complimentary.

Three—The Salon class shall consist of salable portraits. The exhibitor shall be prepared to affirm that his negatives were made for a *patron and prints sold from same*.

Four—The exhibit shall consist of not less than three nor more than six pictures,

only one of which may be selected for Salon honors.

Five—In complimentary class exhibitors are requested that their exhibits shall not exceed twelve prints. No other restrictions.

Six—Application for space in the Art Department shall be made to C. L. Lewis, 1217 Madison avenue, Toledo, O., first vice-president Photographers' Association of America.

Seven—All exhibits must be sent *prepaid* to C. L. Lewis, first vice-president, Photographers' Association of America, care of Steele Educational Building, Dayton, O., and must reach Dayton, O., on or before August 1, 1907. All exhibits not received by August 1st, or on which all charges are not *prepaid*, will not be accepted.

Eight—The association will not be responsible for any loss or damage to pictures while in its charge, but special precaution will be taken to assure the safe return of all exhibits intrusted to its care.

Nine—No exhibits shall be removed from the hall until after the close of the convention. Exhibitors who personally desire to take charge of the removal of their exhibits may do so only by permission of C. L. Lewis, chairman of the Hanging Committee.

Ten—Box covers must be fastened with screws (not nails) and the exhibitor's home address *must be* on the under side of the cover, to insure the safe return of the exhibits.

Eleven—To become a member of this association, one is required to pay the treasurer \$5.00; \$3.00 of this sum is the membership fee, and \$2.00 dues for the current year. To retain one's membership the annual dues of \$2.00 must be paid yearly.

Twelve—Employees are only required to pay the dues of \$2.00 to become members of the association, but must bear a letter of endorsement from their employer, or be identified by two active members of the association.

Thirteen—Exhibits for the Manufacturers and Dealers' Department should be shipped care of Frank W. Medlar, secretary, Photographers' Association of America, care Steele Educational Building, Dayton, O. All charges must be prepaid and all exhibits

must be in place on the morning of August 6, 1907.

Fourteen—No manufacturer or dealer, or their representative, will be permitted to transact business on the floors of the convention hall, unless he or they rent floor space, wall space, desk room or convention privileges

Fifteen—Manufacturers and dealers in renting desk space are to understand that this constitutes their only privilege, and whenever extra tables or surrounding floor space is used for the display of their goods they will be required to pay for floor space instead of desk space.

Sixteen—All manufacturers, dealers or their representatives, attending the convention, will be required to pay the Associate Membership fee of \$2.00.

A picture may be made effective either by simplicity or by richness of its harmony. A violin solo may delight us by its exquisite melody, and so may a full, rich orchestra of flutes, bassoons, violins, violas, trombones and drums. The skill of the master comes out equally in both. However, there is more danger of failure in the struggle for brilliancy than there is in the natural yielding to simplicity.

There ought to be, in every composition of line, note or metre, a rhythm, an alternation from excitement to repose

A considerable portion of subdued tones is necessary to reconcile the leading high-lights and deep shadows; they vary the scale and add to the harmony.

Warm tints may be employed to check those which are cold, and *vice versa*. But reflections should not be employed to that degree which might take away from the solidity and relief of the picture.

The modern tendency in values is in the direction of less contrast than would have been admitted some years back. The black color of a dress, for instance, is not now relieved by white lace trimmings and then

set against a gray ground to bring out the figure in relief; but the ground itself, on the contrary, is made only a trifle, if any, lighter in tone than the drapery of the figure. To do this skilfully demands much tact to get delicacy without smudge, and consequently smudge is oftener the result.

It is necessary to give the appearance of atmosphere between the figure and the background, so as to avoid its seeming to be plastered to the wall. In photography the management of such delicate tones so slightly differentiated is not an easy task since the photographer is denied the potent aid of color in securing a scale of gradation. The causes of variation in pitch between objects of the same color are found in the difference in position as regards the dominant light, differences in the amount of illumination they receive and also in the difference of the quality of the object in reflecting light.

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Side Lights in Portraits

The experience of the best photographers, and we might add of painters, too, tends to emphasize the value of a somewhat high side light at a variable position in advance of the sitter. Certainly it is the easiest to manage, and the student in portraiture will do better to avail himself of the beautiful and varied effects it is capable of supplying than in seeking for novelties and bizarre effects in illumination, which put the head in all sorts of unnatural lights and frequently destroy all likeness. The head ought to receive the lights on that side which will afford the greatest breadth.

On what is technically called a three-quarter view of the head the brightest light will be on the forehead, cheek bone and nose, from whence it should graduate to the retiring side and the chin. The brow will receive light in proportion to its prominence, and under it will be perceived a shadow strongest between the eye and the nose. The light will again glance upon the cheek bone, graduating up to the hollow under the eye and down to form the oval of the cheek.

A light will run down the line of the nose, glance upon the point of the upper lip and the fullness of the under lip, and faintly touch the prominent parts of the

chin. The retiring side of the head graduates into shadow, slightly relieved by half lights upon the eye, the brightness of which will depend, as in the other, upon the prominence of the eye or the heaviness of the lid, but must be equal to the light upon the nearest eye.

If a head be seen in front the similarity to a globe should be preserved, the principal light being on one side of the forehead, cheek and nose, and graduating from thence diagonally to the other cheek and the chin.

The treatment of the various parts will be nearly the same as that described above, the difference being principally in the outlines of the several forms.

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The Use of Stops

A perfect knowledge of the operation of stops or diaphragms in photographic lenses and an apt judgment in putting that knowledge into use, constitutes one of the important qualifications of a successful photographer. The subject is nevertheless one upon which the most limited, if not the most erroneous, ideas prevail.

We do not propose here to enter into discussion on the subject. It is too extended and would demand a careful and systematic consideration and modification according to the nature of the lens itself and other relations of the pencil of light, etc., but merely to state a few facts and offer a few practical hints without entering at all into the optical principles upon which the topic should be based. Questions would arise demanding an acquaintance with matter which, if not possessed, would only confuse instead of enlightening the unscientific reader.

Stops are always used as correctives of some defect or shortcoming, and it may be stated broadly that they perform two distinct functions. By their position they affect the incidence of the pencils of light, and thus modify the shape or character of the image (as photo-engraving manipulation has abundantly demonstrated), and by the diameter of their aperture regulate the character of the definition in a single lens. The approach of the stop nearer the lens increases the area of illumination, increases the curvature of the field and renders the

marginal definition less perfect. But this is part of the subject we shall pass over here, as it has been worked out practically by the lens maker. Removing the stop further from the lens decreases the field of illumination, flattens the field, improves the marginal definition and tends to equalize the illumination all over the plate, but slightly increases the curvature.

A large aperture to use a commonplace illustration acts like a blunt lead pencil where it is impossible to produce a fine stroke, whilst a small aperture brings the pencil to a sharp point, and we have the most delicate delineation. But there are limits to the advantage gained by using a small stop for sharpness. The loss of light and prolongation of exposure, besides there is a considerable loss of relief in the image, a map-like picture resulting instead of a scene, having distance and character, everything is compressed and dwindled.

For brilliancy, therefore, the larger the stop, comparable with other desiderata, the better.

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Never sell your customers by selling bad goods.

✽

EDITOR OF THE CAMERA.

Dear Sir: The articles in the March and April CAMERA by C. H. Claudy on the relation of exposure and development, together with the splendid illustrations to the same, were read by me with the deepest interest. Personally, I do not altogether agree with the author's conclusions, and as there happens to be an interesting discussion on the same subject in this week's *Photo-Revue*, of Paris, I take the liberty of sending you a short abstract of the same. I do not know if competitions of the sort described have ever taken place among your readers, but they would seem to me to have great educational value.

Geo. W. Berz, M.D.

The Liege Section of the Belgian Photographic Association had the idea, certainly not a commonplace one, of organizing a competition in development among its members. The success of this original competition in Belgium makes it worth while to mention the same here. The following are the most important points.

The programme carried two different trials: First, a development competition for lantern slides; second, a competition for negatives. The first was evidently the easiest to carry out under the circumstances, and was to be a sort of preliminary test. Both the management and the competitors learned many lessons in it which will materially assist them in the final trials.

The first competition has just ended; the second will take place in a couple of weeks.

It was decided that the test should consist in plates exposed to a widely varying degree as to the extent of which the competitors were left in ignorance. The object was to attain a series of slides resembling each other and a perfect slide as nearly as possible.

In order to avoid the inherent difficulty of judging the density of a slide, the entrants were given a standard to go by, by having shown them in the lantern, at the time that

the exposed plates were distributed to them, a "type" positive. This had been printed from the same negative that had been used for exposing the plates intended for the competition. Furthermore, it was decided that the competition was to be judged on the screen from a lantern of the same luminous intensity as the one that had been used to show the model.

The rules excluded all manipulations intended to improve the slide after development.

Each of the competitors was given three lantern-slide plates. one overexposed, one normal and a third underexposed.

Every precaution was taken to avoid fraud. Each plate had a number printed on the film on the margin. This number would only appear after development. As a method of control it worked perfectly.

Two weeks after the distribution of the plates the entries were received, each one accompanied by a detailed description of the method employed.

The jury made a preliminary decision, which was later verified in the lantern.

The results were remarkable. In spite of the large differences in exposure, several competitors succeeded in obtaining a series of slides of the most unexpected uniformity. It may be mentioned that the trial proved a veritable triumph for Pyrogallic acid, for good old Pyro, in whose favor too much cannot be said.

The winners, Nos. 1, 2, 3, 4 and 6, used this developer. The fifth employed the mixture of Eikonogen and Hydrochinone, but we shall see presently why he succeeded in surpassing the sixth. The first five commenced by placing the plates in a weak bath with much bromide of potassium, and it was because he did not follow this method that the sixth was beaten by the Eiko Hydro in spite of his having used Pyro. The procedure of placing in a bath suitable for overexposure all plates of the state of which one is in ignorance has always seemed the most logical. At the same time certain amateurs recommend beginning in a bath of medium strength, satisfied to change the treatment one way or another, according to the manner of the appearance of the image. It has been shown more than once, and this competition seems to confirm the fact, that it is

easier to bring out an underexposed plate to its full value by means of concentrated developer than it is to save an overexposed plate once the image has begun to appear in a bath of normal concentration.

The most varied means were employed by the different operators to retard the image of the overexposed plate and then ultimately to strengthen the developer for the remaining two. The most commendable procedure seems to have been the following: Place the plate at the beginning in a solution of sulphite, bromide and pyro and leave it there for two or three minutes. Then add, drop by drop, a solution of soda up to the first appearance of the picture on one of the plates. This is evidently the overexposed one. Its development is finished in the same bath. As to the two others, they are placed in a developer with more soda and little or no bromide up to the appearance of the normally exposed one. Finally, the third one, on which there is as yet nothing, is placed in concentrated developer. One of the competitors made use of a simple trick to distinguish the three exposures. It is astonishing that nobody else thought of it. He placed on a corner of each plate a drop of normal developer. The order in which black spots appeared under the drops told of the exposures.

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Editor of *THE CAMERA*.

Dear Sir: Photographers too often have prints which through some cause or other are partly spoiled; that is, one corner will be discolored, or there will be a spot on them. They can be turned to some account, however, at very little expense. Nearly every one has seen ash trays made with cigar bands pasted on the under side of a clear crystal dish made for that purpose. Well, why not take some of these half-spoiled prints and cut out the good parts and paste them on the under side of the same kind of a dish used for the cigar bands? The writer has one on which he has pasted some sixty heads of himself and wife, all cut from prints that were spotted or spoiled in some other way. They are cut different shapes, according to the subject. A large picture is generally used for a centre-piece and then a row of pictures pasted around that. The next row must be put on

carefully and the upper part only trimmed, the lower part filling in the spaces left by trimming the first row. Keep on pasting rows of pictures until you reach the edge, and the last row need not be trimmed at all. Let the edges extend beyond the edge of the dish, and when all has dried, trim with shears, using the edge of the dish as a guide. The next step is to cover the backs of the prints with felting. Cut this round, considerably larger than the dish, and before pasting it on, stretch it around the bowl of the dish. You will find that it stretches readily, and when you have it the required shape, paste it with some good glue and set it away to dry. All pictures are pasted with ordinary cream paste face against the glass, and pressed out carefully with fingers to eliminate all bubbles. C. H. AUNER.

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Old Negatives

One of the most fascinating ways in which an amateur photographer can pass an afternoon or evening is in carefully going over his store of old negatives, which have been continually accumulating in files or plate boxes until they assume considerable proportions.

It is sad to think how many negatives over which we expended so much care and trouble, hoping that the prints would prove worthy of being hung on exhibition walls, have proved nothing but "wasters." But there are also some which we thought worthless at the time, but which, looked at with the ripper judgment we now possess, show distinct pictorial possibilities, which are capable of being fully developed by judicious modification. Then, again, there are others which by intensification or reduction may be very much improved.

It requires a good deal of moral courage to make up our minds to destroy the worthless negatives, but it should be done, for there is no reason why they should be kept. Their removal will make room for others more worthy of a place in the box or file, and therefore they should not be spared. But first make certain that nothing can be done with them, and from any over which you are hesitating a print should be made and carefully studied.

From the negatives which are about right technically, but somewhat wanting pecto-

rially, a print should be made and the parts which require alteration marked with black and white crayon. These modifications can then be made with tracing paper and the other like adjuncts of the pictorial worker.

The negatives which require intensification or reduction should be divided into three classes, viz.: (1) To be intensified, (2) to be reduced, (3) to be reduced and intensified. The necessary operations should be performed at once, while the resolve is still fresh in your mind. For every worker knows how difficult it is to force himself to proceed with an operation of this nature unless he is confronted by the immediate necessity of it; and when the interest slackens it is possible that, through haste, inferior results may be produced.

A careful and methodical examination of his old work, therefore, will help the pictorialist very much; in the first place, it will show him how much his present work is better or worse than his past; in the second place, it will reveal to him, perhaps, undreamt-of possibilities in pictures which he has discarded as useless.—*The Amateur Photographer* (London).

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A Rival of Whistler

One evening there was a convivial gathering of men from many different nations seated about a table in an open court of the Bauer Grumwald, a well-known Venetian restaurant. The conversation, I believe, was in English, and the subject of Whistler's pastels was brought up by one of his enthusiastic American admirers. A Russian named Wolkoff was flippant and depreciating, ridiculing them as works of art, jeeringly saying that he was willing to bet that he could make half a dozen pastels as good as Whistler's, and, if they were mixed with his, nobody could tell them apart. The American was surprised at this attitude and remarked:

"I'll bet a champagne dinner for all present that you can't."

"All right, I'll take your bet, and prove what I say; but I will make one condition only, and it must be agreed upon by all present: I must be permitted to see Whistler's pastels before I begin."

"I will agree to that, and arrange a day when you can see them."

All this was unknown to Whistler, who was innocent of the reason for the call of his Russian guest. He received him charmingly, and showed him all his pastels. These he pinned on large cardboards, carefully, almost ceremoniously, and placed them before him upon a chair that served as an easel. This was the usual way he exhibited his pastels or etchings at home. The Russian was not heard from for six weeks. Then the committee in charge was informed that he could not go on because he found it impossible to purchase in Venice the peculiar, brilliant pastels with which Whistler obtained his effects.

The American would not let him slip through in that way, so he managed to make it possible for his Russian friend to select numerous small pieces from Whistler's own pastel-boxes. He selected all he wanted, or thought he needed, for the easy task of making a Whistler pastel, and after this exceptional accommodation, returned to his work, saying he would be ready for the jury in a week.

How or by whom the six jurors were selected I do not know, but I remember that two strangers, an Austrian and a Dutchman, were among them; Spain was represented by Martin Rico, England by Henry Woods, R. A., and America by Frank Duveneck and myself. By this time Whistler knew the wager. The jury met in a house on the Riva not far from the Casa Jankovitz, near enough for him to bring his pastels conveniently. The meeting was in a very long room facing the lagoons. The American who had accepted the wager was not there; Wolkoff was at home, sick in bed; Whistler was in the darkest and furthest corner, with his back to the company and his pastels on a long table. I was selected to bring each exhibit from Whistler's hands and place it on a high-backed chair.

It was an extraordinary position in which Whistler was placed, and a veritable ordeal which he faced. He was serious and wore a troubled look, the truth being that he was nervous at the possibility that the jury might let one of the Russian's pastels slip by as one of his own. I am glad to say, however, that, whenever a Wolkoff appeared, it was instantly received with groans and shouts of "Take it away!" Not for one moment was there the least doubt of a dissenting voice.—*From Otto Bacher's "Stories of Whistler" in the May Century.*

A Reducing Camera for Nothing

Many photographers treat their cameras as birds of passage, using them in the bright days of spring and summer and neglecting them when darkness falls and "the stormy winds do blow." But in the hands of "men entirely great" (and all photographers so aspire), there is no reason why the friend and companion of summer should be laid aside in the days of winter. The summer can be re-lived, its forgotten joys recalled and transmitted to others with one's self as *cicerone* and *raconteur*, by the aid of the lantern.

Of course, the portfolio is useful and the making of prints enjoyable, but the making and using of lantern slides has a charm peculiarly its own, and in some case does greater justice to the photographer than does the straight print from the negative. We are thinking of those who use half-plate cameras. Why not let a part of your evening work be the reducing of those pictures to lantern slides? "Because of the cost of a reducing camera," says one. Let us suggest how you may have one for a quarter or for nothing, if you have "a begging gift."

Get two cigar boxes (empty, of course), take the lids off both and part of the bottom off No. 1, leaving a strip the length of the box and of such a width that when the box end rests on the lens the lens may face the centre of the negative; or leave the bottom on and make a circular hole large enough to admit the lens hood. On the bottom of No. 2 place a half-plate negative $1\frac{1}{4}$ inches from each side and draw its size in pencil, but make its length $6\frac{1}{4}$ inches instead of $6\frac{1}{2}$. Then, along the lines so drawn, saw carefully, remove the centre and thus leave a hole $6\frac{1}{4} \times 4\frac{3}{8}$ inches, with $1\frac{1}{4}$ inches of wood at each side. Over each of these side pieces lay a strip of wood (parts of the lid will do) $\frac{1}{8}$ inch narrower than the side and so placed that this one-eighth forms a narrow ledge against which the negative may lean.

Half way on each side fix a small piece of wood ($1\frac{1}{2} \times 1$ inch) by means of a strong pin, so that it will turn freely, and let it project on to the one-eighth margin and thus hold the negative in position. Finally, put

another strip along the bottom, on which the plate may rest, and the chief work is done.

The next question is as to the length of the reducing camera. This may be found by experiment. Place a negative upon the middle ledge of the window frame, set up the half-plate camera, and focus until the image on the ground-glass is rather smaller than lantern-plate size; carefully measure the distance between the negative and the diaphragm of lens, and this will give the length the reducing camera is to be. Suppose this is 22 inches. Take cigar box No. 1 (from which you have removed the lid and the bottom) and place it so that the edge nearer you is 22 inches from the edge of No. 2 box which you have made to hold the negative. Now get four lengths of wood, each 21 inches long and about one-half inch square, and join box to box by fixing one piece of wood along each inside corner, thus making the frame of the body of camera. Paint all this inside wood a dull black (lampblack and sizing), and when dry cover this framework with black calico or sateen, and the reducing camera is there—cost, nothing, as the materials will be given you by exercising gentle persuasion.

To use the camera, take an old negative and cut some straight lines upon the film and place it in the end of the reducing camera made to hold it (film-side in); rest it upon the window ledge, bring the half-plate camera near and let the other end rest upon the lens. Focus in the usual way upon the ground-glass, covering the junction between the two cameras with the focusing cloth. Substitute the proper negative when the focus has been found. Experience will give you the correct exposure, which varies with the light; on a dull day with a slow lantern plate try one second at $f/8$.

In addition to the making of lantern slides the reducing camera can be used as an adjunct to enlarging when the condenser of the lantern is not larger than 4 inches.

Either make a glass positive from a half-plate negative by contact and then reduce in the above way, thus getting 3×3 -inch negative from which to enlarge; or when the lantern slide has been made by reduction, take a negative from it by contact and use this for enlarging by the lantern.—*The Photographic Monthly*.

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Reflected Through the Hood

By C. H. Claudy

THERE is a general impression extant that reflecting cameras—cameras with mirrors that project the image up to a horizontal ground-glass, where the picture is seen through a hood—are usually owned only by specialists, men of means and cranks! This impression, carefully fostered by those manufacturers who do not make this type of camera, while by no means universal, is more widely diffused than it should be.

Probably every one who reads this magazine knows that I use a Graflex in making my living. It is part of my business to make illustrations, and I do most of it with that camera. But when I go out on photographic pleasure bent, I still carry the same instrument—and it isn't Hobson's choice either, as at the present moment I am paying insurance premiums on five different cameras and more lenses than any one man has any business with. So in illustrating this little story I have selected pictures to which I had access, but none of which I made, in order to forestall the prejudice which some may have against this type of instrument if they think it is used in hands which usually operate for business purposes.

It must be self-evident that the ability to see the object which is to have its picture taken, right side up and full size, is an immense advantage. To sight a familiar example, how much easier it is to take a pictorial landscape with a stand camera and a ground-glass than with a hand camera and a microscopic finder? Very well; here is the same advantage with the addition that the image is right side up.

"But I don't want to make speed pictures," you say. "I don't like to do anything but photograph railway trains and automobiles going a mile every time I turn around, and what else is a speed camera good for?" There is just the point. The general impression seems to be that speed work is only possible on



1-300th second
Exposure

ONE WAY TO HAVE A GOOD TIME

Graflex Camera
Velox Print

trains and the like. But here are some pictures—every one a speed picture, and every one, I venture to say, as full of interest as it can be—one at least enters the pictorial field—and none could have been so well taken, if at all, with any other type of instrument.

If you are inclined to dispute the assertion that these are all speed pictures, you will probably settle on the two children pictures as your chance; you will say that no fast motion is visible in either, and that the see-saw picture could have been made as well with any instrument. But study a little closer; note the expressions. Here was nothing posed. From the sober little girl on the extreme right, who is rather more or less bored, down to the other little girl on the extreme left, who knows she is going to be "tooked" and can't keep her face straight, every line in every figure spells action, and the figures and the board fill a five-by-seven plate. Know what that means? It shows the operator was close onto his subjects, and it is a fact, indeed, that a comparatively slow movement, close to the camera, is just as rapid across the plate as a very swift movement some distance away. If you have ever taken a street scene, in which people walked in your foreground, and were puzzled that your one-hundredth of a second failed to stop the movement of some one's leg, you will appreciate my point.

And the second child picture—the little, and to my mind, wholly delightful "May Pole" dance picture—is a fine sample of real speed work. Take a railway train going seventy miles an hour. Bright day—lens at $f/5$, shutter set at 1-800—where is the skill? Here is a dull day—note absence of shadows; a lens stopped down, foreground and background are both sharp;—a sufficient exposure—note details in dresses and in shadows, as in the spectators in the

window ; and yet all the motion is stopped ; there is no blur. Here you have the focal plane shutter at its best—its ability to stop motion, to sufficiently illuminate the plate on a dull day, even if stopped down be the lens, and yet people say it is only good for taking pictures of trains and the like.

Oh, yes, I know this isn't a "picture"! Heaven save the mark—pictures, pictures, pictures, and once more pictures! Why on earth must everything photographic be a "picture"? Is there nothing pretty on earth but what comes within the arbitrary rules of composition of the dictum laid down by painters and bowed down to and worshipped by those who would be artists if they could? If a capable artist choose to paint a subject like this, it would be a picture, of course. He would put in trees and flowers instead of a school for a background ; have one "May Pole" instead of two, and not have all the children dressed in white, so the thing wouldn't be spotty. Just the same I am willing to wager that each of these children, and at least four relatives and friends of each child, would dearly cherish this unpictorial photograph, and how many of our pictorial photographic efforts—we of the great photographic middle class. I mean—are sought after and cherished by six let alone sixty people? This is a wholly delightful photograph, and it exists simply and solely by the quickness and the sureness of a Graflex camera and its mirror and focal-plane shutter. I wish I had taken it.

However, let us get over to the pictorial side of the fence. Not being an artist, and having but a rudimentary art training, I don't like to set myself up as an art critic. So I took the particular picture to which I here refer—the one I have titled "Going into Action"—to a man who is a fine photographer

and also an art critic. Never mind his name; he is and has been a student of art for as many years as I have lived and his opinion counts. He said of this picture: "It is good. The lines are nice; the action is fine; it has atmosphere. It is a little sooty, a little underexposed, but it is distinctly pictorial."

"If this negative were properly treated, and a good gum made, or a good print in some other more pictorial medium," I asked, "would it pass an average jury?" (The print I showed him was on glossy Velox.)

"I think it would pass a very fine jury," he answered.

This picture is distinctly a speed picture. It takes a mighty short interval of time for a horse to move a hoof so it will blur on the plate, yet here is no blur. This is not offered as a sample of the most artistic work a Graflex is capable of doing, such would be absurd, but as a good example of the pictorial possibilities of speed work. Yet imagine trying to get a picture like this with any other kind of a camera than one in which you could see what you were doing! If you knew that the battery was to pass a certain spot at a certain time, you could, of course, have set up a stand camera and probably done as well, granted the focal-plane shutter, but that combination of circumstances is hardly to be figured. Things you want to take usually have to be run after, in my experience; they don't run after me, I know!

Continuing this argument a moment more, it is not an infrequent sight to see a snapshot on the walls of an exhibit. Frequently, however, it is much underexposed—admitted for its action rather than its tones. Had it been made with a focal-plane shutter the chances are it would have been sufficiently lighted—this hypothetical snapshot I am talking about—since the focal-plane shutter



Half-tone cut
twice the size of
original print

GOING INTO ACTION

Graflex Camera
Velox Print
1-1000th second exposure





PHOTO BY
MARY CARNELL

1-1000th second
Exposure

OVER CLEAN

Graflex Camera
Velox Print

admits speed for speed from one to ten times more light than any other kind of shutter.

One of the great features of this type of camera, particularly in the hands of the inexperienced, is its ability to solve the question of what to take. At first, when the camera is new, everything the eyes sees on the ground-glass is pretty. Later, we learn not to judge by color, but by form, and still later, to judge of the contrast of the colors as they will appear in the negative. But it takes an old hand indeed—and some never learn—to look at an object and see it as it will look in the camera, framed in the ground-glass. Here is where the Graflex kind of camera comes in, for it is as easy to look at the image in this

1-800th second
Exposure

THE LAST LAP

Graflex Camera
Velox Print

camera as by the eye—no tripod, no focusing cloth, no wind which blows may disturb you, and no more effort to look than not to look. You may circle an object, seeing every change in the image your motion makes as you move, looking at the ground-glass. With a stand camera you must spread the legs, level the camera and throw the cloth every time you change position. As this gets tiresome after a while it is neglected—and a possible opportunity is gone!

For every kind of work against nature—pictorial, record, portrait, animal, speed or landscape—this kind of camera is supreme. It is not a good interior camera, because it does not admit of a wide-angle lens; it is not a good copying camera, because it hasn't enough bellows or draw—if it has the draw it is too heavy. But the day of the universal camera has passed. It will do all the things any hand camera will do, and a host besides; it does not pretend to be a stand camera or with the laboratory capacities of one.

I have owned and operated nearly thirty different cameras, of every possible kind, style and capacity. Three of these have been Graflex cameras, which I have changed from time to time as the makers improved their product or as my work demanded different sizes. I have never been without one since I first owned one, and I never intend to. If you who read will once use a reflecting camera, you will never be without one either. The majority of the pictures which I take are made with the shutter working at about one-tenth of its capacity; that is, at about one-hundredth of a second; the majority of my work is taken through a lens much stopped down. So you see I utilize the speed

1-300th second
Exposure

"POSING"

Graflex Camera
Velox Print

capacity of the shutter more in the light it admits than the fast motion it stops. Yet when I strike a bad day or a rapid subject, I go right on working with no interruption other than a resetting of shutter and spring—an affair of but five seconds!

It is because I would like to see the prejudice against speed work reduced and the advantages of this type of camera more widely known that I write. The days of the darkroom are passing, except in special instances, and the days of upside-down images and small finders must pass also, except in the special instance.

I did not find it difficult to learn to use this camera, except to educate myself to using fast snaps stopped down or on dull days. It seemed impossible to me that a three-hundredth of a second exposure at any opening could be an over-exposure, and the idea of making snapshots indoors was received with frank incredulity. Yet I now make snapshots indoors all the time—whenever I want to—and on bright days stop down to $f/16$ and give a hundredth of a second exposure—and it really is a hundredth—and get full time. It was hard to learn that, but after I lost a few dozen plates from overexposure I came to. As for snapshots indoors, one trial made me an enthusiast, and a dozen plates confirmed the habit.

Don't you think this and its other habits—habits of the mirror camera—are worth contracting? No, I'm not selling cameras, only appreciating and telling you about something extra good.

Rembrandt Lighting by Aristo Light

By Felix Raymer



THE MOST serious objection I have heard made to the use of artificial light for portraiture is its narrow limits, some claiming they can only make the broad effects of light with any degree of satisfaction. It is claimed, in trying for a more concentrated and some of the shadow effects that it has a tendency to work harsh, due to its being a small light source. I have not experienced this trouble where the light was handled in the same manner that the skylight would be handled. The experienced operator, when working a strange skylight, judges the quality of his lighting from the *tone*, color value or gradation of the flesh. This peculiar quality may be called by whatever name one prefers, but the fact remains that we are working to secure *flesh* in our portraits. If the operator will forget his *source* of light and remember only the *effect* of it on his subject's face, he will cease to have his troubles with this or that light. The *flesh* values are the sum and substance of the whole situation. They must be the same, it matters not what source of light is used. When they are the same the effect of light *must* be the same. It makes no difference what effect of light the operator wants to make, he must have the *flesh values*. All effects of light are identical in this respect, and one is as worthless as the other when they are lacking.

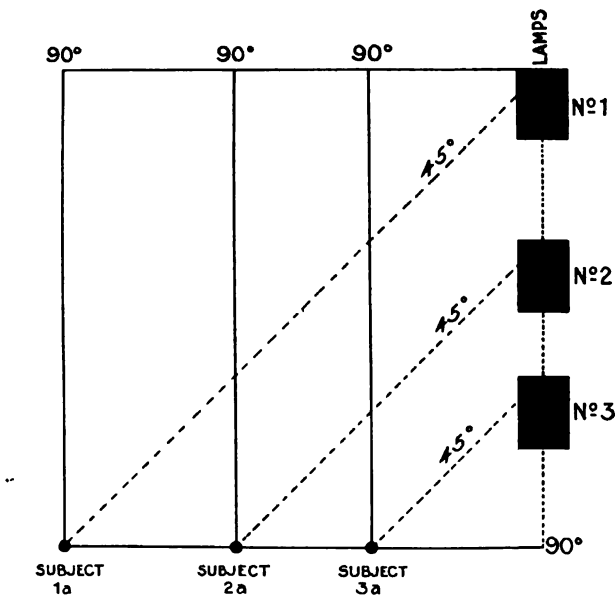
Therefore, to secure good Rembrandt (so called) effects, as well as other shadow effects, the operator must not lose sight of that underlying principle of all portraiture. If he can *see* the flesh value in his lighting he should be able to get it in his negative. But as I have frequently said, if he cannot see it he certainly hasn't it, and if he hasn't it all the powers of earth will not bring it. But it is most positively, emphatically and everlastingly impossible for him to get it by developing. Therefore, he must *see* the flesh values, and then he will have no trouble getting them.

The greatest number of operators seem to experience most trouble in securing what we call the Rembrandt effect of light. This is due to two or three causes. As is claimed, the light is naturally of a concentrated effect, and must, for that reason, be worked so that its natural tendencies are overcome, and this is especially true of the shadow effects, of which Rembrandt is chief. All effects of light, where the shadows are in excess of the highlights, are concentrated in their nature. To make softer effects the light must be diffused or spread, and here is the key to working the Aristo light. 'Tis a foregone conclusion that we cannot make the light larger, as we could the skylight, by opening up all the curtains or screens, so we must soften its effect by diffusion, and the degree of diffusion is determined by the *flesh values*. So we have to come back to the *flesh values* from every point.

My plan for making a Rembrandt effect under the artificial light is to first ascertain (approximately) the height of the lamp from the floor. Now, some one asks "WHY?" and that's what pleases me, for it shows interest. The *why* is this: The height of the lamp determines the distance from it the subject

should be placed—the higher the lamp, the farther away the subject should be. The reason for this is to secure the “old-time” angle of 45° . To better understand this point, I make use of a small diagram and call the reader’s attention to it. Notice the stations of the lamp and the distances from it the subject is placed. Where lamp occupies the station numbered 1 the subject should be stationed at 1a. If she is so stationed, and we draw a square about her with herself as one lower corner of the square and the lamp as the diagonal upper corner, it can be seen at once that the light *must* fall from its strongest point at an angle of 45° . To fully comprehend this point, imagine a line drawn from the top of the subject’s head upward to the same height as the lamp, another line outward to the side of the subject the same length as the lamp is in distance, and it will be understood that each line represents an angle of 90° , and the half of 90° is 45° , and the subject is stationed at that midway point, as shown in the diagram.

Next, the lamp should be in *front* of the subject the same distance it is in height. This forms a *solid* square, and the light is evenly distributed from all directions. I believe we have everything clear so far, and I will not explain the making of the lighting itself. After the subject has been stationed the proper distances from the light, next have her begin turning slowly toward the light until there is a separation of the shadow falling from the nose from that resting on the shadow cheek. When this separation takes place, it will be seen that the light on the shadow cheek extends back to the outer corner of the shadow eye, forming something of a triangle of light on that side of the face. It will also be noticed that both eyes have a small dart of light, giving life to them and preventing the heavy shows in the eye sockets so often seen in Rembrandt effects. Next look into the highest light on the face, and if the color



of the flesh can be seen through it the highlights are correct. If, on the other hand, the highlight appears to rest on a perfectly white surface the light must be diffused, and that is done by placing a white head screen between the subject and the lamp in such a way that only the light passing through it can reach the subject. If one screen is not diffusion enough to secure the flesh color use another, and a third if necessary, but I have never found more than one necessary. Next look into the deepest shadow on the entire figure. If the delicate detail can be seen, the lighting is correct. If it cannot, there is positively but one way to get it, and that is to use a white reflector on that side. Use it close enough to get the detail, and when that end is attained all has been done

that should be done, so far as the lighting is concerned. The next thing is to expose the plate long enough to get all there is in the lighting. Bear in mind, you cannot get more than the exposure you give calls for. If you time for the highlights, you get highlights; if for half-tones, you get highlights and half-tones; if for shadows, you get *all* there is in the entire lighting. Therefore, if after making up the lighting as I have directed the resulting negative shows a harsh effect, it is due to one of two causes, or perhaps a little of both; first, lack of sufficient exposure, and second, a developer too strong in the developing agent. The weaker the developer in the agent the less exposure necessary.



PHOTO BY RAYMER

"DREAMING OF FORMS DEPARTED LONG AGO"

(Guess how it was done, sending answer to the Editor of THE CAMERA.—Raymer.)

Flash Light, 10 P. M.
Cramer Banner X Plate

Some Wrinkles for the Business Man— Amateur Photographer

By E. R. Plaisted

THE business man who finds in photography his best recreation and relaxation is bound to regard the art somewhat differently from the professional, or even the youthful amateur, who has plenty of time to devote to it. The mere fact that he may become so successful that his pictures sell well makes little difference. To one in his position the camera is, first of all, a pleasant pastime, and dark-room drudgery is to be eliminated as far as possible. There may be a certain fascination to the professional artist in laboriously working out each detail in the most orthodox manner, but the man who finds in his camera work his most refreshing relief from the grind of business wants to take advantage of the short cuts. Such hours as he can spend with his hobby he wants to put in largely in hunting for new points of vantage from which to make his exposures.

The outfit and equipment needed depend in large measure on the kind of work he wants to do, as what would answer in one case might be unsatisfactory in another. I may as well say at the start that in my photographic recreation I do next to nothing but Vermont scenery. In this one field I find ample scope for all the time and talent I can bring to bear upon it, and it takes me out into the fields and woods, and over the hills, the best resting places for one who is shut up in shop or office all day.

Such success as I have reached in picture making I believe is largely due to using a small camera, which I can take anywhere and everywhere, and to always keeping it with me. The smaller machines are by no means burdensome on hunting and fishing trips, and it is my experience that many of my best views were taken when I had gone out after something else, little expecting to use the camera at all. On the few occasions when I have left it behind I have had good cause to be sorry. One smoky day in particular, when going into the mountains to watch a big forest fire, I found the air had suddenly cleared and that a grand column of dense smoke was sweeping over the top of the range not two miles away. I would have given a great deal to have had the little pocket camera at hand just then.

It seems almost useless to say that I use roll films ($3\frac{1}{4} \times 4\frac{1}{4}$) and tank development, but as even the finest landscapes seem of small consequence when crowded into a print of this size, some way of enlarging becomes necessary if one desires more than an album collection. With me my walls are hung with bromide enlargements of my best work, in sizes ranging from 16x20 down, in sepia, black-and-white, and colors.

Enlarging can be done by daylight, but the best work requires a good lantern, and as spare hours of daylight are not numerous with the kind of amateur I am writing for, the money spent on a lantern will prove a good investment. My lantern (one of the Burke & James "Ideals"), like my cameras, was bought of the dealer, and is therefore not different from what others are using, but the de-

vices I have contrived for use with it have some originality, and in them lies such helpfulness as this may contain.

To begin with, I wanted to avoid working in a small and stuffy darkroom. My furnace room was large and light and well-ventilated, but it seemed no easy matter to shut out the last vestige of white light when there were four large windows to be considered. It proved a simple and inexpensive matter. Dark green shades on rollers, set inside the casings, and supplemented with curtains made from two thicknesses of black canton-flannel, make the room quite dark even at noonday. The curtains are tacked at the top, are wide and long enough to reach beyond the casings all around, and when let down are held at the bottom with the Moore glass push-pins. Strong cords, running through screw eyes, draw them up quickly when unpinned.

Across one end of the room I built a strong bench 25 inches wide and 12 feet long, about 30 inches high from the floor. Thanks to a hint from Mr. Claudy, in *THE CAMERA*, I left a half-inch crack in the centre of the top of the bench, which forms a guide for the easel when it is moved back and forth before the lantern to get the correct scale of enlargement. The pictures show the general arrangement of the apparatus, as well as the details of the novel easel, or printing frame, and the safety-light box.

As the glass in the easel is 18x24 inches, it was necessary to raise the enlarging lantern on a small bench above the main one, and on this it is a fixture, the centre of the lens exactly coinciding with the cross lines in the centre of the padded back of the easel. It is piped for gas and wired for electricity, but except in the mere matter of comfort on a hot night in summer, I find the gas in every way preferable to incandescent electric light, while an arc light is not only much more expensive in first cost, but the running expense is about ten times as great as that of gas, though for very large bromides it might be worth its cost.

The easel is an adaptation of a blue-printing frame for draftsmen. The glass is fixed in the upright sliding frame, and the back is hinged at the bottom and fastened at the top with a small hook. To lower it and insert the sheet of bromide paper is the work of a moment, and the soft pad of felt, half an inch in thickness, insures perfect contact of paper and glass.

Over the felt pad is tightly stretched a piece of white cambric, and on this is drawn in black ink outlines of the standard sizes of bromide paper. The paper is fastened in place and central with these lines by a couple of common pins at the top corners, stuck slantwise into the felt. If a white margin is desired on the print a mask of black paper can be pinned over the bromide paper, centring it by one of the larger outlines near the edge of the glass. For my work I have not found the lack of means for raising and lowering the easel any disadvantage, though that might easily be contrived if it seemed desirable.

Along the edge of the crack in the bench (before referred to) are pencil lines with figures indicating the proper setting of the easel for each scale of enlargement (found by trial) and the little bench on which the lantern stands has a similar scale for the bellows extension. The final exact focusing is done

with the rack-and-pinion on the projection lens, but if your eyes are like mine, you will get along better to focus on a sheet of white bristol board pinned *in front of* the easel glass, and after focusing, move up the easel a distance equal to the thickness of the glass. Focusing with perfect sharpness is the hardest job of all for me.

After exposure comes development, and with bromide paper a liberal amount of orange light can be used with safety. Were this not the case I should be tempted to try the "time-and-temperature" plan with it, the same as with film, but the safety-light box shown floods my developing tray with a light that is under perfect control. As shown in the illustration, the box is screwed to the wall above the bench, and the bottom cut to an angle, which throws all the light into the tray. The box is painted white inside and strips of felt or flannel set into the joints before nailing, as the heat of the lamp bulb causes even the driest of lumber to shrink yet more. The hinged panel that covers the bottom has felt tacked around its edge to make a light-tight joint when it is closed and hooked, and between the two wooden frames of which it is made are clamped one or more thicknesses of orange paper, easily replaced if they get torn by removing four screws. Into the top of the box is set a "dimming socket," which gives eight degrees of brilliancy to the electric bulb, ranging from one to eight candle power, or from two to sixteen, according to the bulb used. With this the light can be reduced to a mere glimmer, and turned up as needed. For developing plates or handling an open roll of film, a red bulb is used inside the orange paper panel, while for developing gaslight papers the panel is dropped and weak white light used. For bromide papers the orange light can be used in considerable strength, as development takes place rapidly.

On the wall behind the bench are two electric switches, one controlling the light-box and the other serving for the lantern, or more frequently for printing gaslight papers by means of another original wrinkle of mine. On the bench is seen something that looks as if it might be cousin to a student lamp, and that is what it once was—a student lamp—but having outlived its usefulness as such, I cut off the tank and burner with a hacksaw and made it into the handiest of printing lamps. Into the top of the green shade is set a “meridian” electric bulb, held in place by the collars of the reflector that is sold with each bulb. As the whole can be raised or lowered on the standard according to the varying density of the films and negatives all that is necessary is to slap the printing frames down on the table under it, using one with a tilting device if one end or corner must be favored to get a uniform print.

It may be a mere whim of mine, but I believe a frosted bulb yields better prints than one with the filament showing through clear glass, and if you have some films that are thin, but not thin enough to make it worth while to intensify them, try tinting the bulb yellow with water colors and see what happens in the quality of the prints yielded by these thin negatives.

Here is another tip for the film worker. If several 6-shot rolls have accumulated, the time of developing may almost be cut in two by this little dodge. Gum down the ends as usual, but cut off the black paper within an inch of the sticker. Then lap the two ends under the presser-foot of a sewing machine and carefully stitch them together, holding the rolls from unwinding. Now retreat to the dark-room or a closet and wind one roll on top of the other, when it may be handled in the tank precisely like a 12-shot roll.

E. R. PLAISTED

Perhaps I'm lazier than the average amateur (I'm locally notorious for making my poor little alarm clock get up on cold winter mornings and open the furnace dampers at any hour I tell it to the night before), but as previously stated, I'm in photography largely for recreation and pleasure, and therefore strive to cut out every feature that savors of drudgery as much as is consistent with the doing of good work. Consequently I admit it grates on my nerves to have to make a Dutch windmill of myself over the hypo tray while fixing films,* but up to date I have seen no good way to avoid this exercise. I hope somebody will solve the problem yet, and also that of washing the film without danger of getting scratches in the soft gelatine emulsion as it floats about in the running water.

Though called an enlarging lantern, the instrument is also a copying and reducing lantern, and with the addition of a slide holder it becomes a first-class magic lantern; so the money spent for it will yield a large rate of interest in enjoyment if one cares to go into slide making. The rest of the apparatus can be mostly made at home by one who is at all handy with tools, and except for the present lack of running water I can't see how a dark-room could be much handier or more comfortable than mine. Later I plan to set an enameled sink under the safety-light and pipe it.

A few words as to the rest of my outfit may be of some help to those who are just starting into this most fascinating of "hobbies" and pastimes. There

[*Have a long box or tray made so as to take in the full length of the films, then fasten film to a board with a half dozen Moore or Kodak Push Pins so as to keep it flat; then place film down in the hypo tray. For washing, use the same board and place it with the film face down in the bath tub, allow the water to run out slowly and the film will wash in a very short time. Several boards can be used at the same time.—ED. CAMERA.]

are several good kinds of pocket cameras on the market, but as my first one happened to be a Kodak, I have kept on using that make. My present one is the No. 3 folding pocket style, fitted with automatic shutter and a first-class anastigmat lens, though it is but fair to say that all my best landscape negatives were taken with the common rapid rectilinear. Also it has an adapter for using glass plates, but this attachment has not been out of its box since I bought my developing tank.

To regain the advantage of focusing on ground glass, which was my one reason for using plates at all, I bought a No. 7 focusing Buckeye camera. This uses same size of film as the pocket Kodak, but has an automatic focusing glass panel in the back, and the bellows is long enough to allow the use of the back lens alone at long focus—a tremendous advantage for mountain work. Also it has rack-and-pinion focus, which the Kodak hasn't, and the same shutter and lens is interchangeable between the two cameras. For all work which can be done well enough with the little view-finder I use the Kodak, as it is so very light and compact, but there's no denying it is a great help in most cases to be able to compose the picture on the ground glass, and for such work I use the Buckeye. As films are somewhat orthochromatic, they work well in connection with a ray screen or filter, and I find one of these quite helpful sometimes, especially for distant and more or less hazy mountain peaks, etc.

These two cameras, a tripod, a shoulder strap, and the tank developer, constitute about all the photo traps I have beyond the lantern. I have no scales or balances for weighing chemicals, have not yet become addicted to the "graduate habit," and cling like grim death to a single developer for each class of work. I haven't the time to experiment with all the new and wonderful ones, nor, as yet, the inclination. "Simplify, simplify, simplify" is the doctrine I preach and practice in all my photographic doings.

Sometimes a friendly professional will patronizingly tell me I ought to go into working with plates and do some *real* work. My answer is always that there is quite too much "real work" for me in lugging about a bulky and heavy plate outfit, and that in spite of the fancied non-reality of film worth I am able to sell all the pictures I can make from my films, and often have to decline the honor of kodaking this one's dog or that one's baby because my scenery business keeps me so busy.

One of the biggest advantages of my plan of working is that the cost of my little films is so small compared with that of large plates that I can afford to make a lot of exposures I would have to pass by if I were using the plates. And, naturally, the more shots one fires the better chance of getting an occasional bull's-eye hit.

For those who only want one or two enlargements from each of their best films the lantern would hardly be a paying investment, as they can get them made in first-class shape by many concerns at reasonable prices; but enlarging is most fascinating work, and fills in those seasons when there is little else to do at camera craft. It is really almost as simple a matter—with the lantern—to make an enlargement as to make a contact print of the same size, and they

cost no more than contact prints, while the films from which they are made cost but a fraction of what fair-sized plates do, either in money, time or labor of making.

Another great comfort is the safety of handling films. I have a few very choice negatives on glass, and each time I print one of them I feel a good deal as I would drinking out of a fragile glass that had been a family heirloom for an hundred years or so. A slip of the finger, and it might be gone forever. If you keep your films away from fire and water they will last as long as you will need them.

I cannot close without saying a word about Mr. Nicholson's Japanese water-colors. They have practically doubled the scope and attractiveness of my camera work. They have only one drawback; you cannot use them at night. Even my tiny contact prints sell like popcorn balls when judiciously tinted with these easily applied colors, and I have a 16x20 rough bromide of an October woodland that makes the average "hand painting" seem very small indeed since it was colored. Though made from a tiny film, every twig and fern and fallen leaf is there in a wealth of detail no painter could ever hope to copy, while the general effect is just as much a matter of personality and skill as in the case of a real painting. If a black-and-white bromide is used for the foundation, the effect is that of a water-color. If a sepia is used, the result has a resemblance to oils.

Pictures which are otherwise rather flat and uninteresting, especially those with "bald-headed" skies, become things of beauty when properly worked over in colors, and it is surprising how swiftly the coloring can be done after a very little practice. Giving, as it does, so much more rein to the individuality of the camera worker, this addition of hand coloring brings the result still nearer to real ART, while—from the money point of view—pictures that would not sell at all in black-and-white are gobbled up very quickly after tinting.

To return once more to my lantern: there is no question of the real worth of such masterpieces as "The Angelus," "The Horse Fair," "The Stag at Bay" and a dozen others that one can find at the picture stores, but you find a few of them in almost every house you go into and you get tired of a steady diet of even such fine things as these. It is a source of much satisfaction to me to have my friends find none of these over-common subjects on my walls, as well as to have them exclaim in surprise when told that some bit they are admiring was kodaked within a mile or two of home, and enlarged to make the picture they call so beautiful.

And the doctrine of "simplify" applies with even greater force when selecting a subject for enlarging for wall decoration. A tree, a bit of stone wall or rail fence, a glint of water, and a suggestion of distance where the sky comes down is enough to make your picture, and far more satisfactory when hung than a landscape that seems to have a sample of pretty nearly everything crowded into it. And in just this way comes into play another advantage of enlargement over large contact prints. You can select even a tiny corner of a film, if it has a *picture* there, and leave out all the remainder.

But no matter what line of camera work you may find the most enjoyment in—if you use it as a recreation, a stepping stone to climb out of the worries of business life for a spare hour—it will pay you to make a trial of the plan which I have described; to make use of anything which, like the enlarging lantern, roll film, tank development and gaslight papers, contributes toward the removal of what little yet remains of "The Drudgery of Kodakery."



What a Dry-Plate Is

By David J. Cook

Demonstrator at the Illinois College of Photography



THE VERY art of photography is based upon the science of chemistry. We may overcome the difficulty of pictorial treatment, such as the arrangement of line, light and shade, but the results lie hidden from sight. Chemistry alone can tell us in what measure we have succeeded or failed in attaining the end desired, and the manipulation of that wonder to chemical science, the photographic gelatine dry plate, so delicately constructed as to even eclipse the eye in receiving images of objects, becomes of chiefest importance to photography—the making of the negative.

To the average worker the wherefore of negative making seems to be shrouded in mystery. Perhaps were it not for the pictures this branch would receive more attention. It must be evident, however, that in any undertaking, whether it be for pleasure or profit, certain general and fundamental principles must be understood if success is desired, and especially is this so of negative making, which, if not given particular attention, will often mar the pictorial beauty conceived by the artist. Proficiency in this branch of photography must first be gained through a correct understanding of the nature of the sensitive material employed. The tyro usually overlooks or ignores altogether this most essential factor, and hence good pictures are likely to be the product of chance rather than to intelligent foresight.

Briefly, a photographic gelatine dry plate is a sheet of glass coated upon one side with a substance, greenish-yellow in color, which may easily be marred, and is a film of gelatine in which are suspended innumerable minute particles of a sensitive silver compound, which undergoes a change when exposed to actinic light or when acted upon by certain chemicals, known as reducers (or developers), the visible effect being a darkening of the film. It is this susceptibility to change that causes these compounds to be used in photography; in fact, photography owes its very existence to this power of the light to reduce and darken certain silver compounds. Of these silver bromide (silver and bromine) is principally used in the manufacture of the dry plate. Figure 1



Fig. 1

will serve to represent an enlarged sectional view of a dry plate. A is the glass support, on which is coated the film, B, composed of little globules of gelatine (animal glutin) entirely surrounding and holding in suspension the particles of silver bromide. It would be impossible to spread the silver compounds directly upon the glass support and hold them there during the after process of manipulation were it not for the viscous nature of the gelatine,

which also allows of an even and uniform distribution of the sensitive particles over the surface of the support.

Gelatine is a refined glue. In the dry state it is transparent, glassy and brittle; it keeps well; but when moist soon decomposes. Like glue it dissolves in hot water, forming a liquid of about the consistency of cream, and in this condition the ingredients of silver nitrate and soluble haloid salts are added and the whole applied to the glass plate in a uniform film and dried. The film is usually of about one-five-thousandths of an inch in thickness and contains in suspension, one above the other, from twenty to forty of the sensitive silver particles.

The use of gelatine as a vehicle for the suspension of the silver compound also greatly increases its sensitiveness to light, due to the intimacy which exists between the enlarged silver particles and the gelatine, and also to the absorbing properties which gelatine possesses for bromine, etc.

The silver compounds may be produced by the direct union of the elements, silver and bromine, iodine, etc., or by double decomposition of silver nitrate (silver and nitric acid) and any soluble bromide, iodide, etc. In the gelatine dry plate process it is formed by this last method. When a solution of potassium bromide is added to another solution of silver nitrate the atoms of the silver in the nitrate solution, changing places with the potassium of the bromide solution, form two new compounds—silver bromide, which is precipitated, and potassium nitrate, which remains in solution. These silver compounds, commonly referred to as salts of silver, when suspended in a viscous substance, as gelatine, form what is termed an emulsion, and gelatino-bromide of silver emulsion is one of the most highly sensitive compounds known to chemistry, not only sensitive to light and the developer, but also to surrounding conditions of temperature, moisture, heat, gases, dirt, smoke and other contaminating odors.

The making of a dry plate is a delicate and exacting condition, requiring infinite care and skill of a high order; pure water, pure air and correct temperature are vital essentials. Distilled water is used in all mixtures and chemical compounds. The air is filtered and freed from moisture before it is allowed to associate with the coated plate. Every precaution is used to exclude dust and dirt. Electrical fans and heaters and frost pipes serve to regulate the temperatures, and nothing but the purest and very best of chemicals are used. The sensitive emulsion is tested four times, twice during the process of manufacture, once before coating the support, and again before the finished plate is packed, so there is little chance of a bad batch of plates getting upon the market. Every convenience and appliance known to science is exercised, resulting in a finished product capable of receiving artistic expressions or scientific facts. If the consumer has poor success it is due most frequently to mismanagement upon his part rather than to any carelessness in manufacture.

A photographic dry plate possesses two values—the market price placed on it by the manufacturer, and this value plus the skill of the photographer represented in the negative. Shall it stand for quality or mediocrity?

Supplementary Illumination

By John Bartlett



AT A recent meeting of one of our photo societies an interesting discussion took place as to the keeping qualities of orthochromatic plates.

The consensus of opinion was that they not only deteriorated by age, but that even proper exposures which remained undeveloped for some time had a tendency to fog when developed, comporting themselves similar to originally overtimed plates.

The important suggestion was made that the substances employed in orthochromatizing had the power of absorbing light, and so probably continued the action to such an extent as to act injuriously upon the plate.

Of course, the truth of such a supposition requires careful investigation, but when we call to mind that the majority of the chemicals used to give color-values, exhibit phosphorescent or fluorescent qualities there may be some reason for the supposition.

The inertia of the plate must be overcome by the impact of light before it is possible to get a latent image, and so the absorbed light may act as a sort of spur, or, in other words, give to the plate an impetus.

We know that even with our extremely rapid plates there is a limit to the speed at which the shutter does act, even under the brightest illumination.

In the days of wet collodion practice the photographer sought to stimulate the speed of the plate by subjecting it for a brief interval to the influence of light before or after exposure in the camera. It was claimed that this "flashing," as it was called, tended to bring out more detail, the parts of the plate already under the influence of the light, accepting this impetus which the unexposed portions were not able to avail themselves of.

Some went so far as to insert actinic colored glass in the diaphragm of the lens. Others colored the interior of the camera white or blue in the belief the action of light was increased thereby.

Some years ago a method of auxiliary lighting was recommended to increase the sensitiveness of albumen printing-out paper. It was found that if a piece of silvered paper was exposed for a short time to light no apparent visible effect was noticeable, but when an image from a negative was printed on it the impression, or print, came up much more rapidly at first than it did upon a piece of paper not previously subjected to the "flashing" process. This might go to show that auxiliary lighting sets up an accelerating or continuing action.

This flashing method, we may here remark, was found to be of little practical value to the hurried photographic printer, the spur or impetus lasting only for a brief time, the print on the unexposed paper catching up and progressing along with the other, both finishing at about the same duration of time.

In the course of some recent experiments toward producing a uranium paper, very sensitive to the action of artificial light, I placed a sheet of coated paper (the salt being an oxalate of uranium) in a portfolio in contact with an engraving. In less than a day thereafter, on opening the book, I was surprised

to find a beautifully distinct impression of the print. I say "surprised," not because the impression was there, but because the paper had been coated in a very feeble light and therefore could have absorbed but very faint radiations.

The subject of uranium radiations would lead us too far afield, and besides I would hardly venture any opinion just now about a topic with which I am but little acquainted.

But the question of fog in photography does suggest itself. I have often asked myself what is fog? without any oracular response. What is this disturbing element in development which brings down the anathemas of the photographer? May it not, after all, be a potency for good, if only controllable like the other potencies of nature? Perhaps a valuable accessory in development.

Shakespeare tells us

"There is a spirit of good in things evil——"

and why not seek for this good eliminating the evil?

Perhaps we are in a foggy mood ourselves just now, but we cannot refrain from complaining, Why has so little been accomplished in what might be called the philosophy of photography? Despite the labors of eminent men of science and the exhaustive manner in which most scientific problems are treated, comparatively little inquiry is made into the rationale of photographic phenomena.

In this age of vigorous scientific research the neglect is hard to be accounted for. Scientific photography is neglected too much in the storm and stress of art culture. Our exhibitions of late years are wholly given up to a particular phase of æsthetic feeling called photographic impressionism. Doubtless excellent in its way and important in its direction, but we cannot help thinking that it would repay the patient investigators after scientific truth to devote some of their energy in the direction of photography. With few exceptions, of late the researches in photography have been rather desultory. It may be necessary to toil all night before the morning yields success, but nothing is denied to well-directed effort.

What do we know about the latent image? What has been done to clear up the conception about solarization? Doubtless discoveries lie hid which might be brought to light by a careful and systematic course of observation and experiment. It may be that some clue to the mystery of the latent image is involved in the understanding of the phenomena of fog or solarization. Experience shows us continually how one phenomenon depends upon another, but the inductive method seems to have less favor with photographic investigators than the deductive. A theory is set up and facts made to conform thereto, instead of the general principle being an evolution from the facts. We appreciate the great factor of the imagination in scientific discovery, but the temptation must be constantly avoided of wandering off by devious paths from the straight and narrow way which leads to truth. The only method, we repeat, is to build up from facts observed; to deliberately assemble all parallel instances we can muster; to experiment, rather than passively observe.—*Journal of the Franklin Institute.*



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JUNE, 1907

At the annual dinner of the Photographers' Association of Philadelphia, on May 1st, upon the presentation of a gavel to Mr. Ryland Phillips, the able presiding officer, the sentiments expressed were "Art, Love and Harmony." This expression clearly defines the feeling of the professional photographer toward his brother in the art, and harmony certainly prevailed. Most commendable is his feeling of friendship and good will towards his fellow worker. When men of the highest reputation will take their time and give their services toward advancing the lesser lights in photography, one cannot wonder at the success of the launching of a new era for the P. A. of P., and the Philadelphia will soon be changed to incorporate the whole State of Pennsylvania.

We look forward to the day when photographers will be unanimous in their desire to have conventions of their own, and when they will not subject the manufacturer and dealer to the usual demands made upon them for financial assistance (and the manufacturers will gladly welcome the day too).

The photographer must not "wave his wings" and think that the successes of his past conventions have been of his own making—far from it. The financial support of the manufacturer has been imperative, as the trifling dues never covered the expenses. The new plan inaugurated by New York and bettered by "Old Penn" is going to bear fruit, and bear it so that the photographer will not find it an onerous task to pay his trifling annual dues, and help individually to support the right movement.

Lack of interest was never better demonstrated than when making a comparison of the convention of the P. A. of P. at Williamsport and the gathering in Philadelphia of the Philadelphia Association. Fully 66 2-3 per cent. greater attendance at this one meeting of representative photographers than at a State convention! It tells its own story.

At the National Convention the manufacturers should exhibit their latest and best efforts yearly, and eliminate the lesser State conventions and concentrate for a grand showing.

We hope the present movement will meet with success, and give an impetus to photography that it richly deserves.

That old idea (where it originated we know not) that the development should be continued until the image appears on the back of the plate is all the time being rehabilitated, as if there was any vital truth in it. How much killing does it need before it will realize it is dead?

We are confident to say that we say what every good photographer will affirm, that on the contrary a plate which does not show the image on the back will give far better results than one which does show it. The only rational method of judging of proper development is to hold up the plate and to examine it by transmitted light, and to judge by appearance what experience has taught to be the proper degree. Proper density is the result of proper adaptation of the reagents to the character of the exposure. An exposed plate must be diagnosed and the mode of treatment adapted. The tentative method may meet some cases of ignorance of character of exposure, but one prefers, when possible, to adjust matters so as to definitely secure a desired end.

When you have laid in a stock of plates, tested certain samples and are assured of their good qualities, be cautious how you store them away: be sure that the place where they are kept be not subject to foul air or vapors from ammonia, tar, carbolic acid, muriatic acid, etc.; for the boxes are permeable, and the invading force of the air, laden as it is with a host of molecules of mischief, can enter the pasteboard citadel with which the delicate films are fortified, and woe betide the dry plate exposed to their attack.

Let the place where your plates are stored be dry, well ventilated and perfectly free from all fumes, good or ill-smelling: even the pleasant odor of pine redolent of the forest, delightful as it may be to our æsthetic sense, which sometimes exhales from our wooden shelves, may be ruinous to the plates piled up on it.

¶

We accidentally struck upon a method of reduction of overdeveloped negatives which works quite as energetically as the well known Farmer Solution of Hypo and Ferri (red) cyanide of potassium, and at the same time better preserves the shadows. We have been accustomed to reduce with a mixture of Ferric Chloride and Citric Acid, but not having at hand any acid we fell back on oxalate of potassa and found the combination admirable, and as the genial editor of *THE CAMERA* delights to publish the latest discoveries and courts the deluge of letters, inquiries, etc., which are rushed into his sanctum, asking for novelties, we give the method:

Make a solution of Ferric Chloride (per chloride), 1 ounce to 8 ounces of water, and a solution of Neutral Oxalate Potassa one part to eight parts water.

Both solutions keep indefinitely, but mixed are apt to decompose, especially if kept in the light. Mix the solutions to use as needed, one-quarter to one-half ounce of solution to one part Hypo Sulphite.

The plate to be reduced is immersed in the solution, the image weakens quickly and uniformly; that is, shadows are not inordinately reduced. Stop a little short of reduction desired, as the reducer continues to act for a time during washing.

This reducer may be used for local action; a tuft of cotton is dropped in the solution, to which a little glycerine is added, and the part to be acted upon gently rubbed. It is most effectual in reducing halation or portions of the negative which have been light-struck.

¶

What is the difference between a colored photograph of a scene and a painting of it, if not something which the artist gives us in addition to the bare fact? Something that constitutes it a work of "art." If any given page from a French realistic fiction differs from a disagreeable police report (mind, we don't say they all do, witness some of the horrible pictures of Zola), is it not by virtue of what the novelist gives us of himself plus the "fact?"

But this something is not by any means necessarily the "personal element," as ordinarily understood. It need not be in the least an egotistical intrusion of self as some painters make it, and some photographers too, who strive after individualism, not realism. Shakespeare was always realistic, never personal nor individualistic. In fact Shakespeare is nowhere present in his work.

Why do we prefer a fine painting of a friend to a photograph ordinarily considered? Yet does not the "usual thing" of a photograph give the facts more exactly as they are?

By no means. The real facts make up the real friend, and we want them and not idealization, however great the painter's work. What we do want in painting or photograph is the fact told in such a way that while it is truth it is not like a police deposition.

Things in themselves we do not know, least of all can the camera without personality get at them. We must go to art, either realistic or otherwise. Compare the statistical history of a country as found in government reports with the narrative of a historian. In both cases we have the realistic facts, the absolute truth; but the historian adds something of what he reads between the lines of events, divining cause, explaining events or results. This is what the photographer does when he puts the personal element in his portrait.

All questions relating to technical matters, processes, working instructions, etc., are referred to competent experts in the particular subject referred to, and the utmost is done to insure reliable and practical answers being given.

Correspondents are requested to first state their case and then number each question; they should also write on one side only of the paper, and enclose correct name and address—not necessarily for publication. No attention will be paid to anonymous communications or those only signed with initials.

We do our best in all cases to publish the replies in our next issue following the receipt of the inquiry, but cannot absolutely guarantee this.

All inquiries should be addressed to **THE CAMERA**, 606-608 Sansom Street, Philadelphia.

No questions answered by post. No prints criticised.

Errata

In the May **CAMERA** quite a serious blunder occurred in our formula for Glycin Tank Developer. The intelligent (?) compositor took liberties and made the formula ridiculous. We append the corrected formula:

GLYCIN-STOCK SOLUTION.

Glycin 120 grains
Sulphite of Soda, dried (Anhydrous)* 360 grains
Carbonate of Soda, dried (Anhydrous)* 360 grains
Water 35 ounces

For twenty-minute developer; temperature between 65 and 70 degrees. To each part of stock solution add three parts water. For one-hour developer; temperature between 65 and 70 degrees. To each part of stock solution add nine parts water.

*Pure Anhydrous sodas are recommended. If crystals are used double the quantity specified.

STAINS.—(1) Will the yellow stain caused by using Non-Abrasive Developer spoil an acid fixing bath sooner than any ordinary developer? (2) Is there anything that will remove yellow stains caused by the acid fixing bath? —S. H. M.

(1) The Non-Abrasive Developer should not injure the acid fixing bath at all. We recommend the use of 2 drams of acetic acid, No. 8, in 16 ounces water, in which

rinse the prints before placing in the fixing bath. This is applicable to all developing papers. (2) If the yellow stain is caused by the acid fixing bath, then the trouble is that the bath is either too weak or that the bath is too warm. We know of no remedy for removing the yellow stain after the print is made. Why not get a Velox Book from the Nepera Division, Eastman Kodak Co., Rochester, N. Y.? That will explain clearly many things that may be troubling you.

NON-ABRASIVE DEVELOPER.—Can you give me the formula for anti-friction developer for glossy Velox?—M. N. W.

The following is the regular Velox formula:

Hot Water (150 deg. F.) 200 oz.
Metol. 1 oz.
Hydroquinone 4 oz.
Sulphite Soda (anhydrous) 15 oz.
Carbonate Soda (anhydrous) 25 oz.
Bromide Potassium (crystals) ½ oz.

Keep temperature at 70 deg. for use.

Dissolve chemicals one at a time in the order named in the water, stirring constantly.

A bath made of one part of stock solution and two parts of water can be used for both regular and special papers. Or, if preferred, use for regular Velox:

1 part of stock solution.
2 parts of water

For special Velox papers:

1 part of stock solution.
4 parts of water.

To make what is known as "Non-Abrasive Developer," add to each fluid ounce of solution 10 grains of Iodide of Potassium (crystals).

TANK DEVELOPER.—Can pyro be successfully used as a tank developer? (2) If so, how much diluted beyond normal strength used in tray development? (3) How can I determine with other developers how long a time to use them for tank, and how much dilution?—J. E.

(1 to 3) Pyro is the best for tank work. Regarding its dilution, that depends upon the length of time you desire, the strength of the normal solution and the temperature (which should be 65° Fahr.). If, with your normal developer, it takes four minutes for complete development, and the

factor is twelve (high lights appear in 20 seconds), $20 \times 12 = 240$. At end of 240 seconds, or four minutes, development is complete. We will assume that you want a 20-minute tank developer, and by adding three parts water to normal developer, this will be about correct; if for one hour, add nine parts water. Some developers may require a trifle more water, but a test will prove what is best for your needs.

✽

PER CENT. SOLUTIONS.—Please tell me where I can find tables giving the strength, in per cents., from hydrometer readings of solutions of chemicals mostly used in photographic work?—C. P. G.

See *Wall's Dictionary of Photography*, Tennant & Ward, publishers, New York. The following table will probably give you what you really intended to ask for: In each fluidounce of a

| | |
|-----------------------------|---------------|
| 1 per cent. solution..... | 4.55 grains |
| 2 per cent. solution..... | 9.10 grains |
| 3 per cent. solution..... | 13.65 grains |
| 4 per cent. solution..... | 18.20 grains |
| 5 per cent. solution..... | 22.75 grains |
| 6 per cent. solution..... | 27.30 grains |
| 7 per cent. solution..... | 31.85 grains |
| 8 per cent. solution..... | 36.40 grains |
| 9 per cent. solution..... | 40.95 grains |
| 10 per cent. solution..... | 45.50 grains |
| 11 per cent. solution..... | 50.05 grains |
| 12 per cent. solution..... | 54.60 grains |
| 13 per cent. solution..... | 59.15 grains |
| 14 per cent. solution..... | 63.70 grains |
| 15 per cent. solution..... | 68.25 grains |
| 16 per cent. solution..... | 72.80 grains |
| 17 per cent. solution..... | 77.35 grains |
| 18 per cent. solution..... | 81.90 grains |
| 19 per cent. solution..... | 86.45 grains |
| 20 per cent. solution..... | 91.00 grains |
| 25 per cent. solution..... | 113.75 grains |
| 30 per cent. solution..... | 136.50 grains |
| 35 per cent. solution..... | 159.25 grains |
| 40 per cent. solution..... | 182.00 grains |
| 45 per cent. solution..... | 204.75 grains |
| 50 per cent. solution..... | 227.50 grains |
| 60 per cent. solution..... | 273.00 grains |
| 70 per cent. solution..... | 318.50 grains |
| 80 per cent. solution..... | 364.00 grains |
| 90 per cent. solution..... | 409.50 grains |
| 100 per cent. solution..... | 455.00 grains |

✽

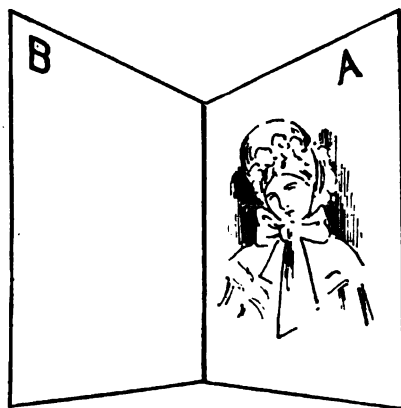
Quite a good suggestion is made by the Eastman Kodak Co. regarding tank developing in their recent magazine advertisements. A camping scene is depicted, and the Kodaker is examining a developed film "done right on the spot." Here is a suggestion for you.

Reproduction of Daguerreotypes by Reflection

I recently noticed that when daguerreotypes are held in such a fashion as to allow the light to glance off into the eye the shades of the picture are reversed, i.e., white became black, and *vice versa*.

From this I deduced that if a sensitized surface were substituted for the eye, the result would be a complete reproduction.

I immediately constructed a light-tight cardboard box, having a circular opening in front to admit the light, and two flat pieces inside, placed at an angle of about 45 degrees, the best angle being found by experiment, so that these two pieces had better be made to move on a hinge. I have attempted to give a better description below of the angle of reflection. The light strikes surface A,



which is the picture, and glances off on to B, the sensitized surface. There must, of course, be a shutter in front of the opening to cut off light after sufficient exposure.

For the sensitized surface, gaslight paper or a dry plate may be employed. P.O.P. must not be used, as its speed is not high enough, the movement of the sun, which is the only illuminant that can be used, causing it to be blurred and rendered indistinct.

A screen is placed just inside the opening, so as to allow no direct ray of light to strike the sensitized surface.—*The Amateur Photographer*.

✽

One man with one eye sees more than twenty men without eyes.

A new photographic society has just been started at Honolulu, H. I., and from the preliminary report the Hawaiian Photographic Society is likely to prove a success.

✽

Whatever your lens need may be, you can get it in a Voigtlaender. If for the smallest Kodak or the largest view camera, they are in stock and tested ready for use. Ask for information from the Voigtlaender & Son Optical Co., 127 W. Twenty-third street, New York.

✽

To Our Readers: Some time ago we published the advertisement of the Buffalo Distributing Agency, 15 Niagara Street, Buffalo, N. Y. As they do not reply to correspondence, failed to pay their bills and the post office folks return their mail marked "not found," etc., we advise our readers to accept a warning hint—don't send to them.

✽

We are in receipt of the 1907 edition of Wellcome's Photographic Record and Diary. Though the book is tardy in reaching us, its contents are right up to date. For fifty cents a copy it gives a practical exposure calculator and many useful formulae. All dealers can supply it, or it may be obtained from Burrough, Wellcome & Co., 45 Lafayette Place, New York.

✽

The third series of exhibitions held at the Little Galleries of the Photo-Secession will be opened in November, with the Annual Members' Exhibition. Every member is entitled to be represented by one print at least. Prints should preferably not be framed, but mounted on 14 by 22 mounts. All prints intended for this exhibition should be sent *express prepaid* or *by mail* to Photo-Secession, 291 Fifth avenue, New York; or Alfred Stieglitz, care of George F. Of, 3 East Twenty-eighth street, New York. Send to no other address.

Willoughby, 814 Broadway, New York, has a lot of new bargains in cameras, lenses, etc. If you will send a two-cent stamp for the bargain list, which contains practically everything that you need, you will find it a money saver.

✽

Hot weather difficulties are being looked out for by the Seed Dry Plate Co., and this month they announce the new Seed Tropical, a plate of the same speed and good qualities of the 26x. They may be developed at ninety degrees without frilling. Ask your photo man about them.

✽

It will only cost you a trifle over a cent to try the new "Halo" paper, and a sample dozen prints can be made for fifteen cents, which should be sent to the Haloid Company, 7 Commercial street, Rochester, N. Y. They will send you the paper, and you make the prints, and they tell you how to do it.

✽

The following letter, under date of March 18, 1907, from Mr. C. V. Cooper, manager of the Castilloa Rubber Plantation Company, of Portland, Oregon, speaks for itself:

HAMMER DRY PLATE COMPANY,
St. Louis, Mo.

GENTLEMEN:—Referring to your letter of December 5th in reference to using your plates in tropical Mexico, I beg to say that I returned on March 1st from an extended trip in that country, taking with me ten dozen of your 5x7 extra fast plates. With the exception of four or five spoiled plates (due to my own carelessness) every exposure I made in that section resulted in a beautiful negative. This is the first time I have had such a result in the many trips I have made in that country. The plates were packed in paraffine paper both before and after exposure, brought home and developed here. This is for your information. Yours very truly, C. V. COOPER.

A new between-the-lens shutter will be placed upon the market during the next sixty days, in which the makers, the Multi-Speed Shutter Co., 324 E. Sixty-fifth street, New York, claim that exposures of "time" up to 1-2,000th of a second can readily be made with it, and faster speeds, if necessary. They have a booklet describing the new shutter.

❖

There is something in the combination of edinol and hydrochinone, as prepared by Dr. Mitchell of Philadelphia, that yields a negative better than those obtained with any of the published formulæ. You only need the one solution, and it is good for plates, film, tank or gaslight paper developing. You can have a liberal sample by addressing Department B, Dr. C. L. Mitchell's Laboratory, 1016 Cherry street, Philadelphia.

❖

F. Harry Hall, manager of the photographic department of the Berlin Aniline Works, 215 Water street, New York, has just returned from an "Agfa" missionary tour of over 10,000 miles, and reports that the Agfa products may now be obtained from every dealer in every State in the U. S. The new Agfa fixing salts are forging ahead, and possess qualities not usually found in the fixing bath. They are now ready for the market, and sold at a low price.

❖

SELF-PROPELLED VEHICLES.—A practical treatise on all forms of automobiles, by James E. Homans, A.M., Fifth Revised Edition, entirely rewritten. New York: Theo. Audel & Co., 63 Fifth avenue.

This popular book fulfills the requirements of the motor vehicle owner, operator and repairer. In his revision, the author has emphasized the practical aspects of motor vehicles of all powers, confining his space to the discussion of matters fundamental in construction and management.

Theoretical matters—important almost wholly to designers and builders—are introduced only where good explanations positively require them, and at no point is the reader's mind burdened with padded material on experimental and obsolete construction.

If the exposure be time or if it be 1-1,000th of a second, you can get it with the Thornton-Pickard shutters. There's a lot of shutter information in the T.-P. shutter booklet, issued by Andrew J. Lloyd & Co., Boston, Mass., and they'll gladly send you a copy free. They've a lot of other good things photographic. Have you ever gotten in touch with them?

❖

The amateur who wants a portrait with that delicate roundness obtained by the professional, will find his regular lens is not equal to the task. A portrait lens is needed. The series A Wollensak portrait lens, with a speed of f5, gives the result desired, and is moderate in cost. A catalogue will be sent by the Wollensak Optical Co., 286 Central avenue, Rochester, N. Y.

❖

No guessing, no figuring—only correct exposures and saving of waste in dry plates. A Wynne meter tells at a glance what the exposure should be, and it is right at all times and under all conditions. The Infallible Exposure Meter Co., 81 Keap street, Brooklyn, N. Y., want you to know more about the meter, and have an interesting story to tell in our advertising pages.

❖

The Norman Photo Paper Co., Water street, Rochester, N. Y., favor us with samples of Veluvet, Artanoa and Platanoa. Artanoa yields a print similar to a rough platinum and full of detail. Platanoa is soft in effect, closely resembling a smooth platinum, and the Veluvet gives a rich print similar to a collodion paper. The papers are quite easy to manipulate, and promise to rank with the leaders in developing papers.

❖

When the editor was abroad some few years ago, the best dry plates he could secure were the Imperials. G. Gennert, New York and Chicago, has been appointed American agent, or you can secure the plates from your dealer. One important feature with the Imperials is that each package is marked with the correct speed number of the batch from which they were taken. Factory tests are made before they are marketed, hence users of exposure meters and others have no guessing to do.

In reading *The Craftsman*, one of the most interesting features is the Hopi Indian stories, by Frederick Monsen. The author has spent years among them, and the illustrations faithfully portray the various phases of Indian life. Mr. Monsen employs a Kodak and the Kodak developing methods in all of his work, and his results are remarkable, considering the difficulties under which he has worked.

❖

We have made a few tests with the new "Ingento Color Filter" on some rather difficult subjects, and feel pleased with the results secured. We had hoped to have a couple of illustrations showing exposures with and without the screen, but an accident destroyed both negatives, and we will show another set later on. In the meanwhile, a request for the little booklet, *Perfect Color Filter*, from Burke & James, Chicago, will explain much about the values of color or ray filters.

❖

A leading film and plate tester of this country writes to the Anthony & Scovill Co., Binghamton, N. Y., as follows: "It gives me pleasure to report that Ansco Film, tested recently, shows both greater speed and better orthochromatic qualities than any hitherto tested of other manufacturers. While I cannot allow you to quote me publicly, I want you to have confidence in advertising the magnificent improvement you have made." An Ansco booklet will give you more particulars, and the Cyko Manual will tell you a heap about gaslight papers. Both free from the makers.

❖

Raymon, in *The Photo-Revue*, makes some improvements in the Cheron method of prismatic color photography that puts the same within the reach of an advanced amateur. The materials required consist of a ray filter, a diaphragm for the lens with a horizontal slit, a cross-line screen and a prism. The details of the method are as follows: The diaphragm is placed in the lens with its slit horizontal. In front of the plate is arranged the prism and in front of this the cross-line screen. This latter has its dark lines wider than the space between them. Each opening in the screen forms an image of the lens opening and

these combine to continuous lines. The picture of an object on the plate is thus divided up into fine lines, and each of these lines is further split up into the prismatic colors. If this picture is now taken on a panchromatic plate, using a yellow filter to modify the blue-violet rays, and a positive from the resulting negative examined in the same place but illuminated from behind, a picture in natural colors is the result.

Another method is to place on the positive, under a Joly color-line plate, in which the three colored lines have together a width equal to the width of each prismatic line and in which the order of the colors is red, green and violet. It now, barring some minor differences, shows in the natural colors, like a picture by the Joly process.

❖

Ever since the appearance of the anastigmat lenses made of three or more uncemented lenses, there has been a debate between the partisans of this type as against the ordinary type made of six or more cemented lenses, as to which permitted the most light to pass for a given opening. The makers of the uncemented kind claim that the thick glass of the other variety absorbed a large amount of light, and the makers of these stated that there was a heavy loss of light in the uncemented type, due to reflection from the numerous surfaces. In a careful investigation, Franz Zetsche (*Wiener Mitteilungen*, 1907) found that there was no material difference between the two types that could be referred to the design.

❖

A correspondent recently sent us a photo of his den, and as the frieze or border on the wall paper was such a novelty, we requested information as to where it was made, etc. The reply came back that the frieze was made on Eastman's Royal Bromide Paper from pet negatives, and when applying the prints to the wall, they were carefully matched so that they made a continuous view on all four sides of the room. Several other rooms in the house had also been papered in the same manner, using foreground studies for one and marines for another. This offers up another good use for bromide papers, and the Eastman Kodak Co., Rochester, N. Y., will be glad to send you a free copy of "Bromide Enlarging With a Kodak," that will tell you of an easy method to make enlargements.

The amateur who only employs his camera for picture making purposes scarcely needs to handicap himself with a "battery" of lenses as the professional must perforce do, for he has to be in a position to cope with any kind of work at a moment's notice. The former, if his penchant be landscape, will select the lens that is best suited so far as his own judgment is concerned, for that purpose, and so also in the case of architecture or figure studies. He will select and compose his pictures in accordance with the capabilities of his tools, and perhaps in the long run will lose little artistically by limiting himself to a single object for each size picture.

Having no need for the "battery" of lenses, all necessity for a camera with extensive range of focus ceases and nothing is lost in weight and bulk, while a good deal is saved in time demanded to unpack and pack by having the camera itself the packing case in which lens, shutter and everything is neatly shut up, such as the modern style Graflex cameras.



A contemporary magazine advises one of its readers as follows: "Almost any developer you are accustomed to use will do for tank development. The only one which is really unsuitable is pyro. We would advise you to use —, etc." It is rather strange that pyro should be condemned, and yet, only the other day, we wasted (?) over four ounces of Dry Agfa Pyro in developing a lot of films and plates in tank developing. In spite of the advice given, we got only negatives that were as perfect as they could be. Was our Kodak Developing Tank hypnotized or did our Gennert Auto Tank only have a "spell"? We were after results and got them, and got the results without much labor. Isn't it funny how many "sot in their ways" ideas some people have? Our new developing room has only three big windows and a door in it, and nothing to shield it from the glorious daylight, yet we developed plates, films and developing papers and got what we were after. There is a heap to learn in photography—we only know an atom—but we know enough to advocate tank development, and are not ashamed of poor old pyro. We used the Eastman formula—but did you ever try it?

By virtue of its superior quality the Bausch & Lomb-Zeiss Portrait Unar has attained a commanding position in the photographic world, and its popularity increases as it becomes more widely known. Its fine optical corrections, together with its adjustable systems for securing diffusion, make it a wonderful all-around lens suitable for busts, three-quarters and full figures and also for groups. Nothing better could be wished for by the photographer who wants a single lens for general work. Another lens of remarkable range is the Bausch & Lomb-Zeiss Convertible Protar, Series VIIa, which might well be used by photographers who do outdoor work and home portraiture. The single lenses of this convertible series are adapted for instantaneous outdoor work under favorable light conditions, for landscapes, groups and large heads, while the doublet is adapted for groups and architectural work. As an example of what this lens will do in the hands of a photographer we cite the fact that it was used by W. S. Lively in making the two portraits entitled "Son of the Mountains" and "Study of an Old Man." The former won the grand prize in open to world class, April 10, 1907, of the Tri-State Association of Photographers, and the grand prize in open to world class, Chicago, May 9, 1907. The latter was selected to hang in the Daguerre Memorial Building, at Winona Lake, Ind.



In an article on sulphur toning of bromide prints and lantern slides by redevelopment in *Das Atelier des Photographen*, Prof. Namias speaks of a different color that may be obtained by bleaching the image in

| | |
|-------------------------|---------|
| Water | 4 ozs. |
| Sulphate of Copper..... | 10 grs. |
| Potassium Bromide | 10 grs. |

And after a thorough washing in water followed by a few moments' immersion in one per cent. Hydrochloric Acid, redeveloping in the usual solution of Sodium Sulphide. The method slightly intensifies the print, and is therefore most suitable for rather pale prints. Redeveloped prints may also be toned in a 1 to 1,000 solution of Chloride of Gold, reddish-brown and red tones differing from those obtained by the above method being achieved.

EDITOR OF THE CAMERA.

Dear Sir:—On page 187 of the May number you ask for a remedy to stop the trouble of Metol poisoning. In all my experience I have found but one effective remedy for this; it is, drop Metol and use Ortol or Pyro.

H. C.

EDITOR OF THE CAMERA.

Dear Sir:—After using Metol for several years without poisoning, by its excessive use I was severely affected by it. I reasoned that alum and borax were useful for hardening the skin, so I made a saturate solution of both and used about equal quantities of them and soaked my fingers thoroughly in this solution. It gave instant relief, and after a few days' treatment the sores healed. Before and after using Metol I soak my hands in the above solution, and have experienced no trouble since. I cannot say that my experience will prove anything, but it is simple and safe, and may do some unfortunate brother some good.

WM. MACFARLAND.

EDITOR OF THE CAMERA.

Dear Sir.—The *Photo Revue* of this week brings more news of the development competition of the Liege Section of the Belgian Photographic Association that I wrote you about some weeks ago. As was mentioned at the time, there were to be two trials, one for lantern slides and one for negatives. The methods employed in the latter differ slightly from those in the last competition, and I again take the liberty of sending you a short abstract of the same.

The methods employed in exposing the plates are of no particular interest. Each competitor was given three exposed plates: one under-timed, one normally and one over-exposed. The results this time do not permit of the drawing of as definite conclusions as to the value of the developing agent employed as did the test of the lantern slides. As a matter of fact both

the Eiko-Hydro mixture and Pyrogallie Acid proved themselves equal to the occasion, the Pyro giving a slightly better result with the over-exposed plate.

This competition has again demonstrated the importance of care and caution in the conduct of development. The use of separate baths, placing the plate first in the one containing no alkali but considerable bromide to which the carbonate was then added very carefully, permitted several competitors to obtain results that were simply marvelous considering the extreme over-exposure of some of the plates.

The method of the winner was as follows:

All three plates were placed in a mixture of Eikonogen (an appropriate developer for under-exposed plates) and Hydrochinone (best suited to over-timed ones) with the amount of alkali required by a normal exposure. The plate on which the first image appeared was quickly taken out and placed in water acidified with Acetic Acid for the purpose of stopping the action of the accelerator and then put into a contrast developer of Hydrochinone with bromide and very little alkali. The next to appear was left to finish where it was. The third was transferred to a powerful Eikonogen developer.

Some of the contestants developed the plates one at a time. In this way one has one chance in three of happening on the particular plate to which the feeble developer with which it is best to begin, is suited. At the same time it is necessary to know before hand, when applying this method, how long a time it takes the image on a normally exposed plate to show in order to be able to say which of the three one is dealing with. Now one of the factors in this is the temperature; it therefore must be taken into account. The deductions to be drawn from all this each can make for himself. Strictly methodical development seems to be the principal element of success. The different developers generally recommended are all good if one knows how to use them. If Pyrogallie Acid has made a special reputation for itself, might this not be due to the fact that it is employed most frequently in two solutions, adding the alkali bit by bit as the image holds back?

The facts proven by these two competitions are not new, but cannot be repeated too often for the benefit of the tyro. Let the beginner know that if, in spite of slipshod methods, he has been able to obtain satisfactory results, it is because fate has been kind; sooner or later the failures will appear and be the more likely to discourage him, since they follow just that period of success during which he will have formed a high opinion of his abilities.

GEO. W. BETZ, M.D.

■

An Open Letter

EDITOR OF THE CAMERA.

Dear Sir:—Permit me to say a few words about the present way of holding conventions. I must confess that I do not share the optimism of the profession and fail to understand the sudden preference for so-called practical business talks (yes, if they were practical, but alas, with the exception of Hearn's reception room debate and Milton Waide's showcase talk, they are few and far between).

I remember of having read the reports that at one of these business sessions, Rockwood told some anecdotes about how he had treated famous sitters (amusing? yes, but hardly instructive), and that MacDonald got up and told the boys what an increase of business he would derive from a showcase, if the management of the skyscraper, in which his studio is situated, would extend to him the privilege of putting one up at the entrance of the building. Now, there are only two or three photographers in the country, if any, who work under the same conditions as the Photographer of Men. Of what use, then, is such talk to the rest of the profession?

I believe this new method of "getting taught quick," of excluding all art talks and of laying all stress upon practical ideas, to be a very futile one. But what can be expected of the officers of photographic conventions who always seem to work in a sort of "imitative" unison? If a certain new feature is introduced at one of the conventions, it is sure to be imitated by all the others. In the eighties, special stress was laid upon the social feature of the conventions, then suddenly in the early nineties the art promotion idea popped up and was

about played out when I appeared upon the scene (some even say that I gave it the death thrust). Now it has changed into a big halloo for business. It emanates largely from Pirie MacDonald. He has a fair share of organizing talent and has succeeded in ushering in an era of conventions, constructed strictly on business principles. *Business that cannot be learnt in a lifetime taught in three hours.*

That is the actual time the photographers had for enlightenment of any sort at the last meeting of the P. P. S. of N. Y. There were only three sessions on the programme. One was devoted entirely to the discussion of local sectional work, and another to the demonstration of ideas to win the fifty-dollar prize. The afternoon meeting was taken up by the usual election of officers and unfinished business.

Of course, I must not forget to mention the much-heralded demonstration of studio methods by Hollinger, Garo, Falk, Rockwood and Bradley. What did they amount to? Is there really anything to be learnt at such demonstrations? Can something that has taken a lifetime to acquire be taught in one hour? The demonstrator is apt to feel slightly embarrassed, he is not quite himself and at his best, and all his visitors can learn is a peculiar trick or a new device. The aristo schools do that much better.

There was also an art talk by Hollinger at the Metropolitan Art Museum. It was advertised as something entirely new. It is as old as the hills. It was practiced at most of the conventions that I have attended (for instance at Washington, Toledo, Milwaukee and Des Moines).

The one print exhibition has the one merit that all men are treated alike. But what is gained by it? It is impossible for one print to represent any man's work. One canvas might possibly represent the annual output of a painter who produces only five or six pictures a year. But a photographer does as many portraits every day. One print is really an absurdity, as it does not represent an average. Men who are known for the sterling quality of their work were represented by poor prints, and others known for ordinary work came out with flying colors. The sooner this method of exhibiting is abolished the better.

Now, what was there so very practical about this convention? I fail to notice it. Did it really teach anybody to make more money out of his business? Did it take the employee into consideration and did it elucidate the relationship between photographer and manufacturer, between photographer and patron? Nothing of the sort.

No, it is all wrong. *A Photographic Convention is supposed to be a business school as little as an art school.* Nor is it held to teach how to run on the most economical basis.

Why do people come to conventions? First of all to have a good time—and they manage to have it by hook or crook. They come to see old friends and make new ones and to keep posted on what the other fellows are doing. The educational part is absolutely a secondary consideration to them. And that even Pirie MacDonald cannot change.

The principal concern therefore should be to make the educational feature (the art side as well as the money getting side) as prominent as the social one. To devote to all three phases an equal share of attention.

W. J. Giffin, of Wheeling, W. Va., had the right *idea* of a convention. You may smile, but I mean what I say. His Washington Convention of 1905 was considered a failure, but it was well planned, although he lacked the executive ability to carry out his plans. At his convention there were half a dozen good speakers (art talks as well as other ones). It had on its walls the best loan exhibition of prominent photographers' work that I have ever seen at any convention. And then the programme of the entertainment committee! It was a most lavish one. It included a speech by Roosevelt, an automobile ride, a theatre party, a visit to the Corcoran Art Gallery, a dinner, etc. The only trouble was that less than half of the programme was actually carried out. Why? Lack of funds, I suppose, and what is more to the point, lack of sympathy among the members of the association in having a really interesting convention.

Now, first of all, the secretaries of conventions, almost without exception, commit the error of neglecting to inform the members what is going to happen at the

next convention. The members who come, come as a matter of course. They think it is the old regulation thing. This MacDonald changed. He is a good advertiser for himself as well as anything he takes in hand. All credit to him for that.

A further trouble is that conventions are always run in a certain stereotype manner. In three years there will be as little interest in business conventions as now in art educational conventions.

Why not make conventions interesting? Why not combine everything that has proved successful? Are there really not enough funds to have three or four good speakers who know what they are talking about? There are any amount of subjects that have not been treated at any convention. Get the right man and pay him well, so that he can prepare himself and give you a talk that is worth listening to. (It hasn't to be me, there are others.) Get the best loan exhibition you can get—a hundred prints of well-known professionals or semi-professionals or reproductions of portrait painters like Alexander, Sargent, Whistler, etc. Hire a man and pay him to get them together. There are many artists who would gladly take such a job. Have demonstrations in studios of big men, but systematically, a regular course for several days and have the results shown. Without results it is as fertile as summer winds on a barren shore.

Get the right men for the jury of awards, and pay them for their services.

If you cannot afford all this, why not charge higher membership fees and dues? Most of the boys can afford it—they come specially to the convention to spend money.

And why exclude the dealers and manufacturers? It hardly seems right. They have always been willing to lend a helping hand. And if it was impossible to give interesting conventions with their assistance, how will it be possible to do without them? Not everybody can run a successful convention on \$2 per man and get the hall for nothing.

But I do not write this with the idea of telling you what an AI convention should be. I merely want to warn all concerned against falling into a rut, of doing a thing merely because somebody else did it.

Get in line, officers of conventions, put

your heads together, evolve something that is worth attention. The men who are loyal to conventions deserve such consideration, and what they want, I am sure, are really progressive, interesting conventions that are educational and social as well as practical.

There are plenty of new laurels to win for the man who dares, as the truly great convention has never yet been held.

SIDNEY ALLAN.

New York, May, 1907.

[In publishing Mr. Allan's letter we cannot say that it gives the views of THE CAMERA upon the subject, nor do we feel that he appreciates the untiring efforts of Mr. MacDonald and his colleagues for the benefit of photographers at large. Whether Mr. Allan has become pessimistic in his inability to look upon the matter in its proper light is a question, and we invite a free discourse from all. Personally we think the one picture feature the right one. If the exhibitor does not send his best, then the exhibitor lacks wisdom. As for the manufacturers they will only be too happy to stop the expense—they are not the beneficiaries—on the contrary, they are the losers. For the same amount of expenditure they can accomplish more by individual visits to the prospective buyer, yet they are willing yearly to submit to the numerous claims made upon them. The only place that we consider that the manufacturer should really exhibit is at the convention of the P. A. of A., and avoid the other forty-six State varieties. We hope to see this plan carried out at an early date. The photographer goes to a national convention to learn, and if the talks are on business subjects and plans shown him where he can do better, then he is the gainer. The big fellows are unselfish and never hesitate to tell the smaller fry things that have taken them years and dollars to learn—yet they do this gratis and pay their own way. The so-called art critics are the ones who consume time and do not accomplish anything. As for the having of "good times," that's what we are here for, and if a photographer cannot spare five days in a year to renew old friendships and make new ones, then, indeed, he is a poor person. We hope that Mr. Allan does not

object to a convention getting a big hall free, for if we can get something for nothing and have people only too happy to give, why should there be any objection? We can name at least twenty conventions in which no charge has been made for the convention hall, and the towns where they were held want to do the same thing again.—Ed. CAMERA.]

✽

La Mise au Point for February brings some modifications to the Sterry method of obtaining reduced contrasts in Bromide prints or enlargements. This method depends on the curious fact that when the latent image is subjected to a substance antagonistic to the developer, between the exposure and the development, such, for instance, as Chromic Acid or Bichromate of Potassium, the gradation of the image is entirely modified. The effect is in no-wise destructive. The finer details remain and the heavy shadows are gradually retarded. In this way the great fault of enlargements, the choked-up shadows, is avoided.

As Bichromate of Potassium is now in every photographic laboratory, it is chosen by preference. A 10 per cent. solution is a convenient strength. Three conditions affect its action: The strength of the solution, the duration of its action and the extent of the subsequent washing. The simplest plan is to vary only the strength of the Bichromate and to fix the time of the immersion of the print at three minutes and the time of washing at thirty seconds.

Given a vigorous negative, the paper is exposed for the time necessary to obtain all the details in the highlights. It is then placed in the bichromate bath, made up of one part of the 10 per cent. solution to ten parts water, for exactly three minutes. The bath is thrown out and replaced by plain water for thirty seconds and the print is then plunged directly into the developer, which for this purpose must be diluted with twice its volume of water. The image appears slowly. All the details show themselves progressively and the shadows gain gradually in intensity. Possible stains are avoided by the use of an acid fixing bath.

The National Association

The twenty-seventh annual convention of the P. A. of A. will soon be here, and all members of the craft who are deeply interested in photography will be in Dayton early on the morning of August 6th, and will not leave until late the 9th.

Dayton is noted as being a cleanly and beautiful city. Our convention hall is on the banks of a beautiful river and about four squares from the leading hotels and the business section.

The hotels are first class and there will be plenty of accommodation at prices to suit all. We have arranged a programme that I trust will be pleasing to all. It is as practical, I believe, as we can arrange for a national gathering. There will be one art lecture by Prof. Otto W. Beck, of Pratt Institute, subject, "How to Make a Portrait Out of a Likeness." It will be illustrated with enlargements and drawings.

There will be a lecture by a prominent photographer on "The Business End of the Operating Room." A lecture by a successful photographer on "The Limit of Prices." A lecture by a successful Washington photographer on "System." A business talk by a prominent stock dealer on "The Photographer from the View Point of the Stock Man."

There will be plenty of entertainment for the ladies. One evening will be spent at Far Hills, where we will have an informal dance.

Now, you people that can do things with the camera, we want one or more of the best photographs you have ever made. There will be twenty-five of the best pictures selected to hang as a salon exhibit, to each of which will be given, while at the convention, a certificate of merit.

It's optional whether you exhibit in this class or make it complimentary—but exhibit. Make your entries to C. L. Lewis, first vice-president, 1217 Madison Avenue, Toledo, Ohio.

Don't wait until you reach Dayton to pay your membership fee. If a member, send your dues now and save the time of standing in line before the box office, which is always a congested place on the first day. If a new member, send \$3 membership fee and \$2 dues for the current year. Send to

Frank R. Barrows, treasurer, 1873 Dorchester Avenue, Boston, Mass.

Application for space in the Manufacturers and Dealers' Department should be made to Frank W. Medler, secretary, Spencer, Iowa.

"Now get busy." Make those prints, and if you have not already decided to go to Dayton, "do it now." We want your help to make the twenty-seventh annual convention the success it is going to be; we want your presence that you may profit by the practical talks by the successful men. You can't get the good out of a convention by staying at home and reading the report in the magazines. Go if you have to close shop. Get next to the bright men of the profession, make their acquaintance, absorb some of the good things they have to tell you; combine with your own ideas; go home and let the people see that your attendance at the convention has been profitable. Fraternally yours,

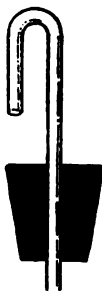
C. J. VAN DEVENTER,

President P. A. of A.

A Print Washer

The description of a washing arrangement for prints as given in the March *Photographic Monthly* makes me think that the following directions for making an ordinary washing basin, as found in the bath-rooms of most houses, into a print washer may be useful.

All that is necessary is to fit a cork carrying a glass or metal syphon to the plug hole. As long as the limb of syphon which passes through the cork is the longer, the syphon will work. Of course the total height of syphon must not exceed height at which overflow of basin is situated. Merely turn on the water tap, and as soon as the water reaches the top of the bend, the syphon will start acting. It is then a simple matter to adjust the supply to equal the outflow. If the syphon empties the basin, as soon as the water again reaches top of bend, off it will go again. This arrangement fulfils the necessary condition that the outflow shall be from near the bottom of vessel.



Camera Outings

To thousands of city dwellers the week-end brings welcome respite from duties, and the amusement-hallowed Saturday afternoon is a time when our people unanimously indulge in recreation, often of a wonderfully violent kind, but, still to those inclined so, it is recreation. Our climate favors much outdoor amusement, and nowhere are surroundings more favorable for almost every kind of recreation, whether by land or by sea. Our camera devotees as a rule find so much picture-making material lavished on all sides that very often the abundance causes repletion, notwithstanding that many there are away inland, amid unsightly surroundings, sighing for our blue waters and gleaming foreshores.

No wonder when our camera people get together for an outing there is a feeling of pure pleasure in the very fact of being in unison, and pursuing their hobby in such pleasant surroundings. Clubs and societies have long since recognized the value of camera outings, and nothing tends to cement the members together better than the open air healthy practice of the craft. But outside clubs and societies there is a large and irresponsible body of workers who never join a club, perhaps through want of opportunity or inclination. They drift about seeking their ideals in their own fashion.

This large body is well worth knowing, its members are easily attracted to that which entails no tie or trouble, and provides amusement for the time being. It is a keen pleasure to get amongst them, and jog along the pleasant highway of outdoor photography. They are merry companions; they do not as a rule bother about fads or schools; they are out to amuse themselves with the camera and they mean to do so. They do not plunge into the gulf of art; they have no time for it; "Be merry while we may" is their motto, and the camera is a means to that end, and the results they look for are just simple records of what they see and admire.

It is only in the search for something to photograph, a subject to "catch the eye," that most people are at a loss. To see photographically is an acquired art, and

whilst the untrained many will pass by the most workable "bits" and desirable compositions, the trained few will stop and select, and find ample scope for their art. This is where surprises await those who have never studied the possibilities of picture-making with the camera, and when an experienced worker selects a simple subject, such as a few rocks, a tree, a weed-covered track, they are apt to despise such unimportant subjects and wander about in search of something more elaborate, something on a grander scale—and here is the opening for a guide and friend.

The greatest pictures in the world to-day are of subjects so commonplace and simple that most of us would ignore them in real life. The most pleasing photographs as a rule are merely effects of light and shade, detail is only the vehicle to hold together the well composed masses, and indeed some of our best exponents of art and photography teach us that subject is of very minor importance. If we are to make photographs that "charm," apart from the ordinary or commercial picture, we must find out the secrets of artists and apply their methods to our work. The study is not exacting, it entails no great mental effort, in fact seeing a skilled worker selecting his subject and making his exposure is quite a revelation to many, and the desire is quite revelation to many, and the desire is at once created to do likewise. Here comes the arousing of the selective faculties, and if this much only is achieved at a Camera Outing, the student has passed the first great stumbling-block in outdoor photography.

In conclusion, we do not know of any better way to succeed in outdoor photography, for those who have not the time to devote to serious study, than to avail themselves of the benefits to be derived from association with other workers, and in this the practice of photography is made extremely pleasant, especially if the conditions are congenial, such as obtain in camera outings and Bohemian wanderings.—*The Australian Photographic Journal*.

■

When you have an idea or a picture in your head don't keep it there, you may not get another.

PRESIDENT ROOSEVELT

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H. KOSHIBA

MRS. NICHOLAS LONGWORTH

BY H. KOSHIBA

(Mr. Longworth's favorite picture
of his wife.)

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Outdoor Flashlight Work

By C. H. Claudy



THE occasion when a flashlight out of doors is required does not turn up every day. It might seem, therefore, as if any talk on the subject was unnecessary. On the other hand, the field seems almost unworked, and because I had to do some of it this winter and the results were so interesting, it seems to me that it is worth writing about. The remedy, if you don't agree with me, is not to read it, although I hope you won't adopt a measure so drastic as that.

I am abnormally fond of automobiling as a sport. Whenever I can persuade any one to take a trip, and invite me, I do so. Now, I have been singularly fortunate in this respect, and have ridden many thousand miles; that many of them were on business bent did not spoil my pleasure in the sport. Among these miles, not a few were made at night. Any one who has ever motored at night knows the individual charm of that branch of the sport, and as people like to read of things they enjoy, I sought and found a commission to write a story of a night run. This, of course, had to be illustrated; so the night run was made—two cameras, flashlight powders almost by the pound and several varieties of flashlamps, pistols and other apparatus were carried. The work was new to me, and I had to devise my methods as I went along. As most of my preconceived ideas went wrong, and the things I didn't expect to turn out well proved the things I wanted, I hope this account will be of interest.

To begin at the beginning, I read everything I could get hold of on flashlight work, including all the directions in both amateur and professional packages, and found they didn't help me a bit. I was informed to the last fraction how much powder to use in every known size of room, with every possible color of wall, but that was of no assistance outdoors. I made a rough calculation, based on the supposititious fact that reflected light from walls might average

thirty per cent. of the total illumination, and knowing I would have practically no reflection outdoors, arrived at the conclusion that I would need at least thirty per cent. more powder for a flash for a given distance than I would indoors. When I came to calculate this for objects distant a hundred feet and more from the camera, I found that I would be ruining my not overlarge bank account to buy powder, and that I would be apt to blow myself up into the bargain.

So I decided to try what I could do with a magnesium lamp first. My initial experiment was made with snow on the ground, and each exposure, with an automobile within twenty-five feet, was made with one flash, taking all the powder a normal, ordinary amateur lamp would hold (1-3 oz.). I held a piece of white blotting paper behind the flash as it was made, and hoped the snow would do the rest. It did. Two of these negatives—I made three—were all that I could ask; the third had so much illumination in the foreground that I had to reduce it locally.

I wasn't happy until I figured out why I got such good results with what ought to have been, according to my calculations, an insufficient amount of powder. Finally I reached this conclusion: The object of a flash indoors is to get a normal, apparently-by-daylight picture, and a given quantity of illumination is necessary. Outdoors a flash is made to get a picture showing things as they look at night, with some ordinary source of night illumination. Conse-

Really a flash obscured by smoke—apparently a machine in the light of its own lamps and those of another machine facing it.

PHOTO BY C. H. CLAUDY

quently a picture may be thin and have but the faintest detail in the distance, and yet have all the appearance of a night effect. The principle is somewhat similar to making "moonlights" by sunlight when the camera is pointed at the sun and the picture much underexposed. The total number of pictures I made was twenty, and I selected a few for the story.

I found that the magnesium lamp had some disadvantages for this work that are not usually evident in other work. To begin, I suppose it is a fact that an ounce of magnesium powder, pure and simple, contains more units of illumination than an ounce of any flash compound. I don't know this for a fact, but I suppose it, inasmuch as most flash compounds are of magnesium with some chemicals to produce quick combustion, and, from the very presence of those chemicals, must have less than the normal bulk per ounce of the metal. On this principle, in indoor work, a flash of short duration with magnesium powder does the work—the flash is over before the smoke gets in the way. Out of doors, however, where a long, steady flame is made, the smoke may drift across the scene and greatly obscure the picture. This happened several times with my first exposures and rendered them useless, except one, which is reproduced here. Although this picture had as much flash as any of the others, nothing took but the headlights, the snow and ghosts of faces. Yet the result caused by drifting smoke looks much more nearly like an automobile by the light of the acetylene lamps of another automobile than did the picture I made

A WAYSIDE CAMP FIRE

PHOTO BY C. H. CLAUDY

Really a camp fire this time, but with five Eastman No. 2 flash sheets on the end of a stick, thrust into the flames. One sheet, or two at the most, would have been ample.

of that very subject. You say I am frank enough not to claim any credit at all for this picture, although it is so natural—like Topsy, it “just grewed.”

Again, the long flash of magnesium powder gives room for movement, and even well-trained sitters like mine can be startled by too much light too suddenly applied. So, for the rest of my pictures, I decided to use a flash compound.

I am mortally afraid of flash compounds. In ancient days I blew myself up several times in a laboratory with compounds of the same general nature as flash compounds, and I have a great regard for my eyes. Premature ignition is to be carefully guarded against. So I prepared a trough of tin, which I mounted on a tripod, and I proceeded to set off my flash compound in the highly rustic and clumsy, but safe, method of touching a match to it, said match being on the end of a long stick. The match was held on with a rubber band. A second match ignited the first, which was pushed cautiously over the edge of the trough and wriggled around in the powder until it went off, which it did with considerable noise, owing, I suppose, to the quantity I used and the way I heaped it up. And it always made me jump.

The camera was to one side—rather, the cameras were on either side, the flash in the centre. Focusing could be done by the light of the lamps upon the machine. The lenses used were both anastigmats, one, a seven inch on an

8 x 10 plate, was used at $f6.8$, and the other, a six inch on a 4 x 5 plate, was used at $f5$.

I found that if I was too close to the subject, I got a much greater illumination on the white road than I wanted. As an experiment I retired a distance of one hundred and fifty feet from the machine and took a flash, using an ounce and a half of powder, and got a dandy negative, which shows detail down the road for five hundred feet. After that I tried making a flash in front of the machine, with the camera behind. I made a very little flash, hoping to show a machine as it looks from behind with the bright headlights going, and the result is very pleasing—a black silhouette of an automobile with three people in it, against a white patch of road in front and two or three arching trees just outlined in light forming a frame. The rest of the print is black paper.

Another effective picture, although it looks like nothing but a flashlight or a burst of fireworks, I am sending with this. The negative was broken and the print has been retouched, but the general effect should be good in the cut inasmuch as that process will minimize the retouching. This was made with a very bright flash on the opposite side of the machine from the camera, and the brightly-lit and interlaced branches are very attractive, I think.

The camp-fire picture was made with several Eastman flash sheets on the end of a stick, which one of the party was instructed to push into the fire.

Supposedly a camp fire beyond the machine
—actually a brilliant magnesium lump flash

PHOTO BY C. H. CLAUDY

This he did, although he squinted somewhat as he performed the act, and the result is as you see. It would have been much better if one single flash sheet had been used. But the direction of light on everything and everybody is evidently from the fire, and that was what was wanted.

Now, it seems to me that here is a field for pictorial work of a new kind, which might yield some very pleasing results. There are lots of things which happen at night which have a pictorial possibility latent within them and which, properly handled, might result in something entirely different from work yet done.

For instance, it is not infrequent for John to go from the house to the corn-crib at night. Mary stands in the farm house door looking after him, and a flood of light from the lamp behind illuminates his figure as he reaches for the lock. He carries a lantern in his hand to find the keyhole easily. The light from the doorway is sufficient for the eye—supplemented by a flashlight, why should it not look natural in a photograph?

The great difficulty in doing this work with a pictorial object is, of course, the normal and natural accounting in the picture itself for the flashlight. If the picture is evidently a flashlight, it isn't, truly speaking, a picture. In my illustrations this did not materially matter. In pictorial work it would matter a great deal. The camp-fire scene is one where the flash is accounted for normally, and no one thinks on looking at such a picture that the scene is abnormally lighted. On the other hand, there are plenty of sources of illumination at night which might be utilized in such a picture. There is, for instance, the moon. No, I am serious. Who ever saw a moonlight picture that looked like moonlight, save the ones made by an underexposed sun? Now, moonlight shows some detail but casts inky shadows. So does a flashlight. Why couldn't a flashlight be set off from the roof of a house and show a tryst in the moonlight between Mary and John?

Of course these are obvious examples. I cannot pretend to think up all the subjects, and if I did, it wouldn't be fair for the man who made the picture.

I have demonstrated to my own satisfaction that there is a field for outdoor night flashlight photographs; it remains with some photographer with more time and decidedly more art knowledge than I have to take it up from the pictorial standpoint. He who does it, and succeeds at it, will have a picture which will astonish those who see it.

As I don't want any accidents to be laid at my door, I would like your patience while I moralize and utter a few cautions:

Don't, if you like a whole skin, try to make flash powder because it saves money. It doesn't. Doctors cost a lot more than flash powder.

Don't smoke while getting ready to make flashes.

Don't carry matches and boxes of powder in the same pocket.

Don't light a match until everything is ready. Use a lantern to see by.

When you do set off the flash, shield your eyes.

Flash powder outdoors is to be used in somewhat larger quantities than indoors, hence the cautions which apply in the house should be even more religiously observed outside.

CHIEF JUSTICE FULLER

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H. KOSHIBA

H. Koshiba, Japanese Photographer

By Josephine Conger-Kaneko



AN interesting figure in the field of modern photography is Mr. H. Koshiba, of Providence, R. I.

Mr. Koshiba takes his art seriously, regarding it as one of the "high arts," and working into it much of the spirit of the Japanese idea of effectiveness. He began his work as a mere boy in the Tamamura Studio in Yokohama, and after coming to this country during the World's Fair

at Chicago, he studied with a number of the leading photographers. He strove to get the best that his master had, but never failed to add his own touch, his own conception of what constituted art from the photographic standpoint.

Besides the example of good teachers, Mr. Koshiba has long been an ardent student of the figure-work of old masters in painting. He has carefully studied the poses, the art of background making and grouping of these artists, and frequently makes a most effective study by adapting a peculiarly fitting face or figure to one of the classic poses.

There are no skylights in the studio of this Japanese artist photographer. He has learned to utilize light from ordinary windows by a process of screen adjustment, and this he finds particularly valuable in taking "home" pictures, which are a specialty with him. His patrons are composed largely of the society people of New York, Newport and Washington, who are generally bored by tiresome sittings in the studios. Mr. Koshiba's process of light utilization has rendered these visits to his studio unnecessary, and he goes to their homes instead. A pleasing result of these home pictures is that they are made in easier poses and amid familiar surroundings.

This young photographer sees great things for the future of photography. "This art is only in its infancy," he said; "its great possibilities lie before, and serious photographers are ever on the alert for new discoveries and new departures from old established rules. Personally, I am an iconoclast, and cling to precedent only at those points where I do not see my way clear to step out into new lines. In this way I think we develop the individual idea, which is, after all, the artistic idea."



Flat Lighting

By Felix Raymer

PERHAPS the greatest drawback to the real success of the photographer is his liability to try and make certain pictures because some other photographer, with a national reputation, made them that way. If every operator would make what is in him to make, we would progress individually as well as professionally at a much faster gait. A few years ago everything seen at the conventions was along the lines of charcoal and white-wash. Every man tried to make his pictures notable by having them unlike photographs. The faces of the subjects looked as though they had been hit with a pot of lamp black, and then to cover up the black, a little whitewash had been smeared on. This was thought to be art, and I will take the other fellow's word for it, for I don't know. But I was just as much infatuated with the stuff as any other fellow, and tried my best to show where it was the thing. It was simply an era in photography, and after a time the pendulum swung back, and I am fearful it has gone just as far the other way. To-day about ninety-nine negatives out of a hundred go to the other extreme, and so flat is the lighting that there is little or no expression left in the faces. A year or so will pass and the pendulum will make another swing and we will probably be at a mid-way point and be making good work. Let us hope so at least.



H. KOSHIBA

When we were making our charcoal and wash photographs, it was thought to be the thing to curtain our light down so small that if a fellow had used it for a bull's eye he would have had to be a Buffalo Bill to hit the centre with a rifle. If more than one ray of light slipped through and spread anywhere but right at the subject's face, we were so completely "bamboozled" we could not make the sitting until we had captured that extra ray and confined it to the cellar. In addition to this we had to have not less than four screens, including the background, placed about the subject in such a way that when we were

through the sitting he or she had to make a clean jump to get out. If a little streak of light passed the skylight other than what we wanted, the screens were designed to grab it on the way and squeeze it until it promised to "be good" and never try the trick again. When we exposed the plate on these sittings it was the aim of every operator to see how close he could come to not giving enough time to get the shadows, and the result was the subject looked as though Satan had kicked him out of the middle of the Infernal Regions and the poor chap hadn't had time to wash the soot off his face before we nailed him.

Nowadays things are different. More than half of the pictures we see are so flatly lighted they look as though the operator had used the big Niagara Falls searchlight and hit the subject square in the face with it and fired as he hit. No highlights, no half-tone and no shadows, but all one flat, lifeless mass. Photographers, in trying to do things differently, go to extremes and make them so absolutely different they have to change to something else before many years in order to hold their trade. The harsh, cold print of a few years ago became tiresome to the dear people, and goodness knows it was a wonder that any were ever sold. In fact, most of the operators will tell one now they were not sold, but palmed off on an unsuspecting public. It is becoming the same with the flat stuff we have been raving over so long. There is nothing solid in either; nothing lasting and nothing that grows on one. What we should do is to get to the bedrock, and when we do we will find our pictures "will live," as friend Griffith says. But when he said that he did not mean a charcoal and wash picture, nor did he mean a searchlight effect. There is a medium that when hit will produce work "different," of which so much is said, and its difference rests in making every face different or to appear to be lighted differently. It is the claim of every operator that every face must be lighted differently. This is not exactly true, for every face will be lighted differently regardless of what the operator may try to do *if this medium is struck*. That medium is where the light and shade have been so placed that there is a striking relation between them and yet each stands for itself. One should be able to see the effect of every ray of light in the face, so to speak, and yet every ray have a bearing on every other ray. When we look at the highest light in the face we know it is made the highest light by the strongest ray of light being concentrated at that point; the second highest light is the second because the second ray of light is concentrated there, and so on through the entire lighting. Now the operator, if he realizes this, will at once see he must know where that strongest ray must be placed and the second ray and so on until every ray he is using has its place. Can he do that? Certainly, and as soon as he reaches that stage he is in position to call himself master of his light, and not until he has reached it. We speak of accentuation and subordination. The accentuation of any part of the face is done by but one method, and that is to place light at that part. It cannot be done in any other way, so the operator must know what ray of light should be placed at that part. Shall it be the highest ray in his source of light, or shall it be the lowest, or one of the middle rays? When he can determine which of these rays of light should go to a certain part and which to another part, he holds within his grasp the solution of the mystery for making his work "dif-

ferent" and making his "pictures live." But so long as he runs off after every faddist he will never be anything more than a copyist. He will never be pointed out as a progressive man—one who does things for himself—but will be satisfied with receiving a little cheap notoriety from having made a picture "that was almost as good as some one's else." Great stress is being placed upon buyers "asking for and insisting upon getting the original article" by manufacturers of different goods, they pointing out the fact that an imitation is but an imitation after all. So it is with pictures. An imitation is at best only an imitation. The true diamond is but made to look prettier by comparison with an imitation.

The cause for so many flat effects is that operators, to get away from the old charcoal and wash effects, went to the extreme and began to advocate the idea of opening up the entire light, kick out all screens and use nothing but the good old clear light as it comes from the skies, and I have heard some say they would much prefer having no glass in the light if they could solve the problem for keeping the rain out of the house. FOLLY. In addition to this they place their subjects almost, if not quite, in front of the entire light and face them toward it, using a white ground, and then call the result ART. Our best operators, men who have made pictures that still live and will live for years, are the men who control their light and get just exactly what they want. In Papa Cramer's art room in St. Louis there hangs seven pictures made by Mr. Landy (deceased many years). These pictures illustrate Shakespeare's seven ages of man, and I challenge any operator on the globe to produce better work, notwithstanding the fact that these pictures were made years and years ago before all this talk of ART came up. They stand to-day a "living" monument to the ability of one of America's best operators. It may be said he was an artist. He certainly was, to judge from his work, and he was not a faddist. He did not place his subject in the centre of a flood of light, snap his gun and call it art. He placed his subject in such a way that every ray of light did what he wanted it to do, and he was there to make it do it and the results show that his efforts were successful.

If the operator will study pictures that are successful and pictures he has reason to think are really good, not with the intention of copying those pictures, but for the purpose of bettering himself by the study so that he can make his work different, he will receive benefit. If he then strikes the happy middle ground and makes neither flat, lifeless work, nor harsh, hard, cast iron effects, he will see that he is not copying, although he may have studied some other picture to get his negative, for it is not possible to copy after another man's work when he reaches the point where he knows what to do with every ray of light in his room. Some seem to think a knowledge of their light and a painstaking working of it mean slow work, or, as they call it, "fussing" and "jumping" about with no set end in view. Just the reverse. A knowledge of the light and a careful working of it mean method, and method means speed in handling the sitter. There is no fussing in this, for the operator knows just what to do at every stage and does it without making a lot of useless passes.

In and Out of the Dark Room

By Richard Trotter Jeffcott

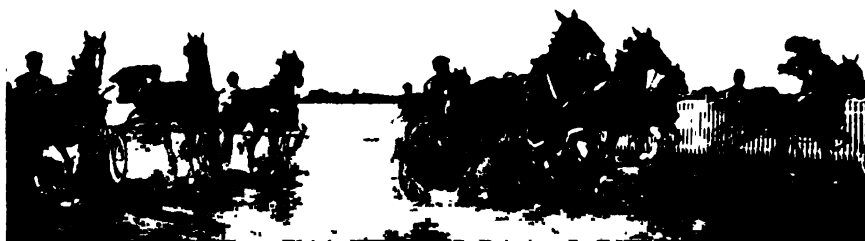
IN AND Out of the Dark Room" was selected as the title of an original illustrated lecture recently delivered before the Columbia Photographic Society. So much interest was manifested by the large audience who heard the talk that it was at urgent request Mr. Jeffcott was prevailed upon to rewrite his notes for a special article for THE CAMERA. It is our intention to publish this article in three successive numbers. The cuts herewith presented are from the original negatives from which the slides were made.—ED. CAMERA.

Our first slide (No. 1) does not portray a photographic manipulation. We are unaware of its origin or the authority for the act, yet to *Life* the credit belongs for its presentation. Whether it be a "positive" or a "negative" is of little moment; sufficient is it for an explanation of a portion of our title.

We have the authority of the Eastman Kodak Company for the latter portion of our title (No. 2), and as the presentation is so apt we will accept it as a fact beyond dispute.

The application of some household articles to photographic methods requires more than passing attention. For instance, we have before us an ordinary two-quart hot-water bag (No. 3). From successful experiments I found that photographically the water-bag has two valued uses and of a directly opposite condition. In winter, when the temperature of the dark room and solutions are low, the control of the solutions is your own by following this method. Partly fill the bag with hot water and lay your developing tray on it (No. 4). Control of the temperature of the solution can be readily had by moving the tray on and off the bag, and fine chemical results can be obtained in your negative as normal conditions are within one's control. In summer the opposite is desired—to reduce the temperature of your solutions to 65 or 70° Fahr. Lay your tray on the bag, which, instead of holding hot water, contains a fair amount of cracked ice. By this method one does not have to watch for particles of ice (usually placed in a tray) marring the film, or the other device of adding ice to the solution, which in time melts and reduces its working quality. Try these "tricks" and convince yourselves of their adaptability to your needs.

The making up of a fixing bath necessary for ordinary use for, say, six months is an easy method when done systematically. Our formula calls for



ten pounds of hypo; this may appear a large amount, but when one gets used to making it up for months ahead and having it always at hand, the item will appear small. Procure for the purpose a large earthen crock of wide mouth

ACID FIXING BATH FOR PLATES AND FILMS.

No. 1.

| | |
|----------------------------|---------|
| Water | 480 oz. |
| Pea Crystal Hypo..... | 10 lbs. |
| Sulphite Soda (anhy.)..... | 10 oz. |

No. 2.

| | |
|--------------------------|---------|
| Water | 160 oz. |
| Powd. Chrome Alum..... | 10 oz. |
| Sulphuric Acid C. P..... | 1¼ oz. |

which will contain at least one-half this amount of water. Also for storing your fixing bath it will be useful to have two large jugs, as may be seen in No. 5. We first procure a piece of cheesecloth large enough to hold about five pounds of hypo and tie it up "pudding" shape, suspending it over the mouth of the crock, which now contains about two hundred ounces of water, and then gently lower it into the crock until the bottom of the "pudding" is about one inch below the surface of the water (No. 6). The hypo will dissolve rapidly, and the cheesecloth, acting as a restrainer, will give you a clear solution free from chips, straws, etc., usually found in commercial hypo. Repeat the process until the remaining hypo is all dissolved. We have now remaining from our No. 1 portion eighty ounces of water; in this dissolve your anhydrous sulphite of soda. When thoroughly dissolved add to the hypo bath. Our No. 2 bath calls for ten ounces powdered chrome alum. We suggest powdered in place of crystals inasmuch as it dissolves more readily, but its cost is a trifle higher. It will probably take three or four days to dissolve the chrome alum, which may be hastened some by using hot in place of cold water. However, this is immaterial, as the bath is usually made up some time before using. After the alum is entirely dissolved add the sulphuric acid, and our No. 2 bath is now ready and can be added to No. 1. Pour No. 2 into No. 1, slowly, constantly stirring. We now have a fine fixing bath of emerald color without precipitation, and which will, under normal use, last for six months or more.

Every dark room should have a "Percentage Table" for handy reference. When one wants to know how many grains in a solution calling for various percentages, such as bromide potash, bichromate potass and other such chemicals, reference to the table brings your answer at once.

"PER CENT." SOLUTIONS.

In each fluid ounce of a

| 1 per cent. solution there are | 4.55 grains | 10 per cent. solution there are | 45.50 grains |
|--------------------------------|-------------|---------------------------------|--------------|
| 2 " " " | 9.10 " | 15 " " " | 68.25 " |
| 3 " " " | 13.65 " | 20 " " " | 91.00 " |
| 4 " " " | 18.20 " | 25 " " " | 113.95 " |
| 5 " " " | 22.75 " | 30 " " " | 136.50 " |
| 6 " " " | 27.30 " | 35 " " " | 159.25 " |
| 7 " " " | 31.85 " | 40 " " " | 182.00 " |
| 8 " " " | 36.40 " | 45 " " " | 204.75 " |
| 9 " " " | 40.95 " | 50 " " " | 227.50 " |



I have here (No. 7) a line drawing which will, I hope, be readily understood. It is my way of explaining how to focus your view on the ground glass and to obtain the best results. Central critical definition is one thing, and even distribution is another, and, as we have more use for the latter than the former, the little chart will not come amiss. Take, for instance, a 5 x 7 ground glass. Mark your centre as per the +; now divide again on both sides between the centre and edge, and we find two points which our dotted circle touches. These are the points you want to look at when focusing your view, and you will find that, as a whole, your negative is more easily sharp at all points, and that whether you use a rectilinear or a high-grade lens.

The washing of plates is a serious question. Are they washed thoroughly in a long time or are they not? Look to your method of washing. Figure it out, and your answer will be, I trust, right. I will give you my idea (No. 8), and while I have found it all right, study it for yourself and make of the theory a practical test. I use an 8 x 10 fibre fixing box which will hold 8/10, 5/7 or 5/8 and 4/5 plates. At the extreme bottom edge pierce at opposite diagonal sides a small hole; use a hatpin heated over the gas jet for this purpose. The opening can be enlarged with a "bit" until it is about $\frac{3}{8}$ inch in diameter. An ingenious holder can be made of wire for the inflow. Plug up your openings until the tank fills; withdraw and the outrush of water will carry off the hypo from the plates. At the end of thirty minutes, after a test for hypo you will find your wash water perfectly clear. If reasoned out, you will find the ordinary method of washing plates only churns the hypo and water and does not permit it to flow off. Hypo, being naturally the heavier, sinks and is readily carried off by my method. I have found that twenty to thirty minutes is ample for this method of washing.

Tank development is a good idea for developing plates and film packs. Personally, I have tried and tested a good many formulæ and now have settled on this one; it is easily prepared, does not cost a great deal, and the results are

TANK DEVELOPER FOR PLATES.

Time, 45 minutes; temperature, 65 degrees.

| | |
|----------------------------|---------|
| Water (hot)..... | 96 oz. |
| Metol | 40 gr. |
| Glycin. | 20 gr. |
| Sulphite Soda (anhy.)..... | 75 gr. |
| Carbonate Potash | 300 gr. |

extremely satisfactory. However, it must be prepared in hot water to readily dissolve the glycin, and when brought to a temperature of 65° is ready for use. The time of development is not too long, and when used in connection with the water-bag idea (as explained) the finest results are obtainable in summer and winter.

I may be a trifle old-fashioned in using the old-style fixing box for tank development (No. 9), but as I have found it hard to improve upon I am using it, not to influence you to its use, but rather to explain the idea. My friend, Mr. James Battersby, of this city, recently placed on the market a useful article for developing film packs. The idea is, I believe, patented. His method is to use metal discs somewhat larger than the film, turn the three edges so the film

will not slip out and hold at the top by a metal clip. With his idea they can be developed, fixed and washed without removal from the support. I understand they will be ready for sale in a short time.

Circuit and panoram cameras are coming to the front. The development of these films is similar to the "kodak film" idea, yet differs somewhat. The black paper does not cover the entire film, as in the "cartridge idea," and for this reason the apron in the machine or tank is first covered with cheesecloth, separating the film from the apron. The formula for the development of circuit film was given me by Mr. W. B. Cline, of the Eastman Company, and is given herewith.

DEVELOPER FOR "CIRCUIT" FILM.

Seven inches by six feet.

| | |
|-----------------------------|------------|
| Water | 75 ounces |
| Sulphite Soda (anhy.) | 510 grains |
| Eikonogen .. | 135 grains |
| Hydroquinone | 36 grains |
| Carbonate Potassium | 545 grains |

Add to above 1 ounce water; temperature, 65 degrees; time, 10 minutes.

NOTE.—At this point of the lecture a practical demonstration was given of a *Hose support*, *Mounting Prints on Plainotype cards*, and the *Uses of a Dropping Bottle*. Also there was shown a circuit print 10 inches x 6 feet long, and an explanation showing how it was made.

The next section of this article will take up *Dark Room Appliances*, *how to make and use them*, appearing in our next number. Each article mentioned will be illustrated.

Mr. R. T. Jeffcott is a photographic expert with the John Haworth Co., 641 Arch street, Philadelphia. He will be glad at any time to answer questions asked him personally or by mail regarding this article or any photographic subject.—ED. CAMERA.

The Field Glass as a Telephoto Lens

By Edgar Simpson



IF you possess a pair of field or opera glasses in half an hour you can have your telephoto lens at work.

The tools required: A pair of compasses, a fretsaw (or a penknife, used with sufficient care), a small screwdriver and bradawl, three or four small brass screws, an old lens-board, the lid of a cigar box, one or two visiting cards and a bit of dark cloth.

Now let us get to work; first on the cigar box lid mark a circle large enough to cover up the hole in your old lens-board and leave a margin of about a quarter inch all round. Cut this out, unscrew the eye-pieces of your opera glass, measure the diameter at the screw, mark a circle of the same diameter in the centre of the round you have just made. Cut this hole out and see that the eye-piece *just* fits, and that the thread of the screw passes a bit beyond the board.

With a little photo paste stick a bit of black cloth onto the back of this, cutting a hole in the centre to allow the eye-piece to pass through. This is not absolutely necessary, but advisable to assure a light-tight joint.

With the bradawl make four small holes, not too near to the edge of this little board, and screw it onto the old lens-board.

Pass the eye-piece into the hole, then screw it up onto one side of the field glass, allowing the other side to hang down (having previously taken off the other eye-piece).

Now unscrew the front glass and measure the diameter (inside) of the small sliding tube which is connected with the eye-pieces. Mark with the compasses on a visiting card and cut four circles to fit exactly into the tube. In the centres of these circles with a very sharp knife cut holes about $\frac{1}{8}$, $\frac{1}{4}$, $\frac{3}{8}$ and $\frac{1}{2}$ inch in diameter. These cards must be painted dead black and are for your stops, and must be placed in the small tube, where they can be held in position by a bit of bent wire or attached by three bits of stamp paper. You can now screw on the front lens and attach the whole thing to your camera. All you will require now is a lens cap. If you have nothing better the focusing cloth will answer the purpose. You are ready now to go out and make a few trial exposures.

About a 10- to 12-inch extension will be probably required to have a good image on a half-plate, but this will depend upon the opera glass. A few trials

will soon show you what to do. First rack out the camera to the extension you require and then focus *very carefully* with the thumbscrew which adjusts the distance between the lenses.

Select a view about 500 to 1000 yards away—something with good contrasts. Best results are obtained on a very clear day; for instance, before rain, when the distances seem very near. The length of the exposure will depend upon the usual conditions of light, the size of the stop, or rather the equivalent value, the extension plate, etc. The rules applicable to tele lenses will be useful to refer to. You may expect to give exposures from one second upwards. Don't be afraid to give plenty, and remember it is easier to save an overexposed plate than an underexposed one.

One other thing is to be remembered: Opera glasses are not "corrected" for photography, and therefore do not be surprised if the image does not come out quite sharp on the first plate. A little practice will show you what correction to make after focusing.

It will be useful to know both the focus of the negative and positive lenses. The latter you can easily find out for yourself, but the former you had better get your optician to determine for you, as it is important.

When you know these, the following rules will be useful. (The foci of your lenses will very probably not agree with the examples given.)

To find the magnification of a tele, divide the distance between the negative lens and the focusing screen by the focus of the negative lens and add 1. Example: Negative lens, 3-inch focus; extension, 12 inches.

$$12 \div 3 = 4 + 1 = 5 \text{ times magnification.}$$

To find the equivalent focus of a combination, multiply the focus of the positive by the magnification. Example: Positive, 5-inch focus \times 5 times magnification = 25-inch equivalent focus.

The relative rapidity of a tele system diminishes in the same ratio as the focal length increases with the magnification. Thus, to find the equivalent value of a stop, multiply the f value of the stop for the positive by the magnification. Example: Positive, 5-inch focus; stop, $\frac{1}{2}$ -inch diameter = $f/10$.

$$f/10 \times \text{magnification } 5 \text{ times} = f/50.$$

The relative exposures of lenses are in the inverse ratio of their required apertures; thus, in the preceding case an exposure must be given with the tele 25 times as long as with the positive at the same opening.

$$\text{Example: } 10^2 = 100; 50^2 = 2500; 2500 \div 100 = 25.$$

To find the exposure for a tele, multiply the time of exposure which would be required for the positive alone at the same aperture by the square of the magnification.

The positive at $f/10$, let us say, 1-50 second.

The square of the magnification (5 times) $5^2 = 25$ $25 \cdot 50 = \frac{1}{2}$ second.

This seems complicated, but in practice it is simple enough. When once we know the focus of the negative lens we only have to divide that into the extension which will give the magnification, the square of which, multiplied by the exposure from the positive lens at the same opening, gives us the exposure for the tele.

It is well worth a trial, and the trouble of fitting up is quite small.—*The Photographic Monthly*.

Natural Balance in Portraiture

By John Bartlett

PHOTOGRAPHY has made rapid advance recently in the direction of artistic composition and originality of illumination; but from an examination of many examples of figure composition, or, in other words, artistic portraiture, one is apt to notice how seldom the photographer is master of the powers of motion and of natural balance. We have previously, in a paper contributed to *THE CAMERA*, touched somewhat lightly upon the importance of the proper conception of the presentation of movement in composition, and so shall at present treat of natural balance only, reserving for another time the discussion of the very important theme of movement in art representation of nature.

Although, as in movement, much useful information about natural balance may be gleaned from the works of Da Vinci, Raphael, Ghirlandajo, Flaxman, Thorwaldsen and others, and from many of the eminent painters, especially of the French school, the great source for study is in nature itself.

The great painters, and especially the sculptors, should be looked to for inspiration and for suggestions.

Whatever passion or meaning may be conveyed in the face, unless accompanied with consistent motions and gestures and a due equipoise of the figure, the intention of the artist would necessarily be contradicted and destroyed. Therefore, to preserve in every case the requisite balance and to represent with truth and character the relative degree of muscular activity to each and all the parts is the greatest test of the artist's skill, and as much the instrument of expression as the proper expression in the face itself. It has been well said that it is this evident unity of purpose and the accordance of every part of the body (the hands and feet by no means excepted) with the expression of the countenance which gives such a natural and captivating effect to the works of Raphael, and it was the still greater knowledge of the construction and powers of the human frame which enabled Michael Angelo to delineate every diversity of action and position with an energy, feeling and character peculiarly his own. We might point also to Rubens for vigor of representation of natural balance, but there is a deficiency in the accordance of the muscular energy with the expression of the faces of his men and women. This accordance presupposes not only ability on the part of the artistic photographer to call forth the internal workings of the mind, but also great skill in those who pose for the special embodiment of the idea. There is great danger of photography transcending its limitations and of bordering on the territory of the grandiose or theatrically sensational. However, I do think that natural balance is not generally thought of in posing the whole, attention being centred on the countenance.

Touching upon the subject of theatrical pose, one must not fail to perceive how careful were the Greek sculptors to avoid overdoing the dramatic even in subjects demanding grand or terrific characterization.

Beauty with the Greek was the paramount principle in art, so that, even in the grief and anguish of Laocöon there is no loss of dignity by representation of violent mental emotion as would disgust, or rather does horrify us in much of modern French painting. The true aim of art is not "to harrow up the soul," but to excite sympathy and at the same time admiration.

In the figure of Niobe we see intensity of anguish combined with the most exquisite form and natural balance which exalt it into a most sublime work of art.

As Hamlet cautions, "To the very torrent, tempest and whirlwind of our passion" we should "beget a temperance that may give it smoothness."

One of the most agreeable qualities of art is grace, which, though independent of beauty of countenance, is inseparable from symmetry of form, and so chiefly dependent upon the natural balance of the figure.

Grace which is conspicuous in the artless positions and gestures of children, depending upon the harmonious undulations of all parts of the body, is generally counteracted in adults by deformity of dress or by affectation.

Natural pose or grace of figure may be seen in the exquisitely delicate flexion of the head, upon the neck, in the flowing lines of the arms, the rising or falling, advancing or retiring of the shoulders, in the facility with which the body turns upon the hips, and the constant muscular activity which calls forth the smooth and gradual changes which take place to preserve the equilibrium of the figure.

To the photographer, grace or natural balance is generally associated with the draped figure; and sculpture more than painting is here his great teacher, especially ancient sculpture, for the Greeks always employed clothing to decorate, not to conceal, the human figure. These ancient sculptors have left us most excellent examples of every kind of garment, in motion and at rest; some large and ample in folds and texture, some extremely delicate, scarcely concealing the figure and revealing every subtle movement of the limbs. The photographer should carefully study these, as he may gain from them an insight into the principles on which drapery should be adjusted, and by reference to nature and in subordination to the limitations of his art, obtain results that would be original and withal beautiful. Something might be learned from the so-called pre-Raphaelites, but what of good they possess is so inordinately larded over with mawkish sentimentalism that I refrain to advocate a study of their work.

Albert Dürer has produced some grand examples of drapery which no doubt were derived from the same source of study equally open to the photographer—nature.

Flaxman, too, was a great master in this study of natural balance. The adjustment of his drapery is admirable, and the precepts which he has left on the subject are most edifying.

In acquiring knowledge of the mode in which folds are naturally generated and spread, according to the coarseness or fineness of the material, the employment of the artist's lay-figure would be found of the greatest service to the photographer in studying drapery in repose. The student must endeavor

to comprehend the rationale of drapery, how it is naturally affected by raising or extending a limb, in what degree the weight of the material counteracts the effects of the movement, how the folds originate from those points where it is held, enlarging as they recede, spreading where unconfined, or changing their course where they meet with resistance. He should pursue them carefully through their whole progress, attending duly to those sudden terminations which are often so characteristic and effective.

A knowledge of all these particulars will afford him opportunity of turning drapery to great account in posing the human figure so as to preserve the natural balance.

He will not then need to tire or disgust his living model by vaguely experimenting, with arranging and rearranging the folds without definite idea of what he wants to effect, trusting to chance alone for some fortunate accidental disposition of line and fold.



Bromide or Gaslight Paper

By E. A. Turner

WHAT is the difference between bromide paper and the so-called gaslight or developing papers of the type of Velox, etc.? Of course, the gaslight paper is much slower than the bromide, but so are some dry plates much slower than others.

The essential difference—the foundation of all the differences—is in the chemical composition of the sensitive coating. Bromide paper is sensitized with an emulsion of bromide of silver in gelatine, but gaslight papers are sensitized with emulsions either of pure chloride of silver in gelatine or a mixture of chloride and bromide of silver in gelatine. The difference in speed, contrast and gradation qualities of the various makes and grades of gaslight papers is due to differences in the method of preparation of the emulsions. There have, it is true, been made and placed on the market at various times so-called gaslight papers whose sensitive coating was simply a slow silver bromide emulsion, but such papers have never been a success. We will, therefore, consider a gaslight paper to be a paper coated with a chloride of silver emulsion or one in which chloride of silver is the predominating constituent.

The first difference noticed in the manipulation of bromide and gaslight papers is the vast difference in speed. The bromide paper is so fast as to require a safe light (ruby or orange) for handling and development. Gaslight papers are so much slower that they may safely be handled in an ordinary room, lighted with artificial light, if the paper is kept either at a distance of ten feet from the light or in the shadow. In the working of gaslight papers I have always found it most convenient to place a large screen on one side of the light, so that it will cast a large shadow on the table. The table will then be illuminated only by the light reflected from the sides and ceiling of the room, and this reflected light is so weak that the paper will not be fogged unless exposed to it for an unnecessarily long time.

The great difference in speed of the various papers also makes a corresponding difference in the exposure required. Light conditions being the same, the average gaslight paper will require twenty to fifty times as long an exposure as the average bromide, or, in other words, the bromide requires only one-fiftieth of the exposure necessary for the gaslight. This is the reason why bromide is so universally used for enlarging. The light is weak, and exposures required for gaslight papers are rather long. Bromide reduces the exposure to a convenient length of time for the busy worker, and hence is nearly always used, although the results in enlarging on gaslight papers are certainly far superior.

There are important differences between bromide and gaslight papers in tone and in average gradation quality. The tone of a bromide print is usually a slightly warm black; the shadows are rather soft and the highlights are nearly always more or less veiled over. The tone of a gaslight print may be a bluish black, a pure, deep platinum black, or a brownish black. Any of these tones are readily obtained by a careful worker on a good gaslight paper. The highlights are absolutely clear and pure—not veiled in the slightest degree. On gaslight papers of inferior quality, or on any papers that are so old as to have deteriorated, it is impossible to secure the blue-black and platinum-black tones: only brownish tones may be obtained. On these papers, too, it is also often impossible to secure the clear highlights and rebates that are produced by fresh, high-grade papers. But in comparing the best bromide prints with the best gaslight prints from the same negative, one cannot but admire the superior purity of tone, depth of shadows and clearness of highlights of the gaslight papers. It makes no difference whether the prints be direct contact prints or enlargements, the comparison holds in either case. The superior results on the gaslight papers have led some few photographers to arrange their enlarging apparatus, to be illuminated by direct sunlight, by a mirror. Such a light is so powerful that the exposures become quite within the bounds of comfort—usually from fifteen seconds to one minute. Besides the superiority of results secured, there is the advantage of the gaslight paper being easier to manipulate and less expensive.

Bromide and gaslight papers are also different in manipulation. While the developer is of the same general character, we notice, on comparing formulæ, that a metol-hydrochinone formula for bromide paper is usually more dilute and contains a less proportion of the alkali, carbonate of soda, than the metol-hydrochinone formula for gaslight paper. The gaslight papers require a strong developer that is specially strong in alkali to bring out the full depth of shadows and purity of tone. Ferrous oxalate developer, the old standard for bromide work, is comparatively weak in its action, and for this reason is scarcely ever employed for gaslight papers.

Now, we would naturally expect the gaslight paper to develop quicker in the stronger developer, but, as a matter of fact, gaslight papers will develop much more rapidly than bromide papers in the same developer. The chloride of silver responds more readily to the action of the developer than does the

bromide of silver. With the developer of the strength usually employed for gaslight papers, the image is completely developed in from fifteen to thirty seconds. This is the *proper* developing time. If the print develops much quicker than fifteen seconds it is overexposed and will not have the proper depth and purity of tone. It requires from ten to fifteen seconds before the full depth of shadows is acquired by the print. The tone also is a dirty brownish black when the image first appears, but gradually turns to the pure black tone, so that a print that has been immersed in the developer ten or fifteen seconds is entirely free from the brownish shade. The actual time required before depth and purity is attained is not at all definite, but depends upon temperature and strength of developer and quality of the sensitive coating on the paper.

Bromide papers in their proper developer develop very much more slowly. The coating on bromide paper is similar to that on dry plate or film, and the developer is much the same as that employed in developing the negative. Therefore, it is but reasonable to expect that the image will develop up at about the same rate. And such is the case except for this difference.

When developing the dry plate or film we are working to secure all possible detail in the shadows, as usually the exposures are more often under than over, in spite of all the good advice offered, that we should always make our error on the side of overexposure. A little stain or fog is immaterial. In developing bromide paper, however, the principal aim is to secure good tone and gradation and secure prints absolutely free from all traces of stain or fog. In negative work best results are secured in a development of three to five minutes. But in bromide work a shorter developing time of one to three minutes is better, as it secures full brilliancy and depth of tone and keeps the whites clearer and purer. In all photographic work it is well to keep in mind that stain and fog are always caused by too long a time of immersion in the developer. It makes no difference whether we are developing plates, films, bromide or gaslight papers, the principle holds good in all cases. Too warm a developer produces stain or fog, because all the chemical operations progress more rapidly at a higher temperature and stain and fog occur more quickly, just as development proceeds more quickly, in a warm developer. Of course, we are not now considering the stain due to impure or insufficient sulphite in the developer.

Everything considered, the gaslight or chloride papers have many important points of advantage over the older bromide papers, and the enormous and rapidly increasing sales of gaslight papers prove that these advantages are appreciated by the practical photographer. The bromide is still used, and will continue to be used for some time in enlarging and in rapid printing machines wherever speed is of prime importance, but for general photography the gaslight papers are superior both in convenience and in result.





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JULY, 1907

Our new competition, "No. 104—The Old Oaken Bucket," promises to become an interesting one, if we are to judge from the number of promises we have received from prospective contestants.

Several correspondents have asked if but one set of pictures may be entered. There are no restrictions, and as many sets may be entered as desired.

Others have asked if 3x3 inches is compulsory. No, but the prints must be at least nine square inches—they can be ninety square inches or larger if it suits.

❖

At the twenty-seventh annual convention of the Photographers' Association of America, to be held in the Steele Educational Building, Dayton, Ohio, August 6, 7, 8, 9, 1907, discussion of the prize or no prize question is to come before the convention. A committee was appointed in compliance with a resolution adopted by the Niagara Falls Convention. Said committee consists of W. S. Lively, Elias Goldensky, and D. D. Spellman. These gentlemen are expected to formulate some plan to be brought before the convention in the way

of a resolution that may be discussed and voted upon, and thereby have the perplexing question settled in open convention.

This question should be settled definitely at Dayton, and whether the photographers of America are to have prizes or no prizes, salon or no salon, medals, certificates, or what not, is an open question, but the officers of the association are in a quandary—they do not know what is wanted, nor does THE CAMERA, nor can we advise. We have given out medals and then been told that the recipient "doesn't care for tin ware;" we have given certificates, and they do not appeal; we have given cash, and then the fellow thinks he didn't get enough. It is a tough proposition. Personally, we feel that the honor of having a picture accepted and placed in the Salon should satisfy everybody. Pot-hunters, of course, will say cash, or probably if they get a gold medal, will sell it at so much per grain. Let the mercenary spirit drop and be honest with yourself and your fellow workers.

Send C. L. Lewis, First Vice President, 1217 Madison Ave., Toledo, Ohio, your opinion on a postal card. Make it brief, say about forty words, as he is busy, and he will place the replies before the committee. But for goodness sake let us have the question settled for now and for all time.

❖

Photography may be said to be made up of mysteries, from the preparation of the plate to the finished picture, and it is to the unraveling of these mysteries that we must apply technical knowledge or education. Yet how often do we find our younger brethren, who perhaps have just commenced their course, content if they can take a good negative and from it print a satisfactory print. This is especially so among amateurs, never for a moment considering the why and the wherefore of the steps they are taking, nor how it is that certain processes bring about certain results, nor stopping to consider how that wonderful and mysterious latent image has been formed on the sensitive plate. How different is the case with the man, be he amateur or professional, who having carefully studied his subject can confidently look forward to obtaining a certain result to his labors, not because somebody else

told him it would be the case, but because he knows the *rationale* of what he is doing and is not groping in the dark. This brings up the question, "What is the best way to obtain the necessary technical and theoretical knowledge which we now know to be of such value in practice?"

No doubt one great help will be careful reading and study of the good works on the subject; but when the student is left to himself he is apt to fall into a habit of desultory reading, swallowing much, digesting little; either letting information go through his sensorium like water through a sieve, leaving nothing behind, or like a sponge, letting the clear stuff pass and retaining nothing but the mud and slime.

Very few self-instructed students have the faculty of the bee in culling pabulum and of separating the honey from the wax. Did you ever stop to think that our common word sincere meant literally without wax: that is, pure honey? Let us be sincere in our efforts after instruction. Good photographic journals like *THE CAMERA* and some others on this side and in Europe are sincere in furnishing good, wholesome and assimilable information. But alas! some have too much of the wax in their make-up, which is apt to float on top and look like the real bee-food.

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We have frequently called attention to the striking similarity in the work of the great painters to some of the best photographic productions of landscape, portraiture and genre photography not exhibiting to the same degree the relation to compositions by the painters of real life. This affinity of the photographic landscape to a well painted and composed scene from nature by the brush was most prominently brought before us after an examination of some beautiful reproductions from the work of the great English painter, Constable.

One picture in especial, the "Hay Train." This work ought to be studied by the photographer in search of the picturesque, not only for its admirable composition, but also for its truth to nature, management of light and shade and exquisite drawing of clouds, trees, churches, mills and other country objects.

Constable is a master in drawing as he is also in color and chiaroscuro. In color especially his pictures are instructive to photographers. They have scarcely anything which might be called warm coloring, yet they express the warmth of summer so truly that one fancies he sees the tremulous heated air near the ground. He never falls into the too common mistake of mediocre painters, or even some of the good painters who influenced Turner so particularly, that what are called warm colors are essential to convey the idea of warmth in landscape. The truth is that red, orange and yellow are only seen in the sky at the coolest hours of the day, and Constable fearlessly painted mid-summer noon-day heat with blues, greens and grays forming the predominant masses, and succeeded because his sensibility of eye directed him to the true colors at the season he most loved to paint, and which he generally indicates by an elder bush in flower.

✽

From editing a photographic magazine to the raising of apples is a big jump, but Brother Todd, of *The Photo-Beacon*, has seen fit to dispose of his magazine, and will now devote his energies towards propagating delicacies for the inner man. It is with regret that we read Todd's *au revoir*, but as he has promised to be good and write an occasional article on photography from his new home on the Pacific slope, he will not be totally lost. Good luck to you, Todd, and may you gain as many friends in your new venture as you did in photography.

✽

Acid Fixing Bath (Carbutt)

A.

Water 700 parts.
Hyposulphite of Soda.. 260 parts.

B.

Water 100 parts.
Sulphite of Soda..... 30 parts.

C.

Water 50 parts.
Sulphuric Acid..... 2 parts.

D.

Water 150 parts.
Chrome Alum..... 15 parts.

For use: Pour C *slowly* into B, and then add A and D in the order mentioned.

All questions relating to technical matters, processes, working instructions, etc., are referred to competent experts in the particular subject referred to, and the utmost is done to insure reliable and practical answers being given.

Correspondents are requested to first state their case and then number each question; they should also write on one side only of the paper, and enclose correct name and address—not necessarily for publication. No attention will be paid to anonymous communications or those only signed with initials.

We do our best in all cases to publish the replies in our next issue following the receipt of the inquiry, but cannot absolutely guarantee this.

All inquiries should be addressed to THE CAMERA, 606-608 Sanson Street, Philadelphia.

No questions answered by post.

No prints criticised.

PYRO DEVELOPER.—Some time ago I had a pyro formula, which originated, I believe, in the Camera Club of New York. Do you know what it is?—A. K. R.

The following is the original formula:

A.

Sulphite of Soda (crystals)...1440 grs.

Citric Acid 60 grs.

Bromide of Ammonium..... 30 grs.

Mix in order named in about 8 ounces water (distilled), then add

Pyrogalllic Acid..... 480 grs.

add water to make solution up to 10 fluid-ounces.

B.

Sulphite of Soda (crystals)... 960 grs.

Carbonate of Potash..... 1440 grs.

in water to make up to 10 fluidounces.

For use, take 1 dram of each (A and B) and water to make 2 ounces.

For soft effects, dilute to 4 ounces.

HARDENING FILMS.—I am going south this summer, and have fears about losing my negatives due to the high temperature. Will you please give a hardener for both plates and films?

Water100 ozs.

Formalin (Schering)..... 3 ozs.

This bath can be used to advantage after the plate has been fixed. It is not essential to rinse the plate before bringing into this hardening solution. Two to three minutes will suffice to harden the gelatine sufficiently for general purposes; also, use an acid fixing bath.

LOCAL REDUCTION.—In local reduction I find difficulty in controlling the reducer, and have spoiled many negatives in my efforts to do so. I have several negatives that I wish minor reduction in that I do not care to risk persulphate or the Farmer's reducer on. Can you suggest an easier method?—J. N. S.

First, procure a piece of very fine velvet erasing rubber, free from grit and dirt, and apply it to the negative (dry) just as you would in removing lead pencil marks from paper. To do small work it is best to sharpen the rubber to a point, as you would a lead pencil, and gently rub the part to be reduced until you get the desired result. We are indebted to Mr. John Fitz, Jr., of this city for this idea.

DEVELOPING FILM PACKS.—Is there any special appliance that I can use to develop Film Packs by tank development? I have tried rubber bands, clips, etc., but not very satisfactorily, as they mark the films.—A. G. W.

The simplest method of developing Film Packs is to first wet the film and then lay it on a clean glass a size larger than the film, carefully going over the emulsion side of the film with a swab of wet cotton. This will remove the air and cause the film to adhere to the glass by suction. Reverse the glass and place another film on the other side, then place it in the tank the same as you would a plate. Fixing can be accomplished in the same manner. Use either a Gennert "Auto-Tank" or one of the Burke & James pattern. Both are excellent for the purpose.

N. Adrianow has been experimenting with the preparation of iron paper, first recommended by Herschell. He prefers the following formula:

Solution No. 1.

Distilled Water.....200 c.c.

Oxalic Acid..... 3 gm.

Ferric Oxalate..... 30 gm.

Solution No. 2.

Distilled Water.....100 c.c.

Nitrate Silver..... 5 gm.

Both solutions are mixed and Saxe or Rives paper floated on the bath for two minutes and dried in dark.

The prints are developed in plain water and fixed in hypo.—*Photo-Correspondenz*

Proposed Monument to the Memory of the Late James Inglis

Pirie MacDonald, at the end of the year 1896, suggested to me that I should endeavor to get James Inglis to write a series of articles on lighting for the benefit of the professional photographers of this continent. I placed the matter before Mr. Inglis and he at once gladly assented because he felt that it was the duty of every man in any profession to do the best he could to help those who were earning their living in it. A great many people never realize what they owe to the profession that has given them an opportunity to earn a living, but James Inglis realized this to the full and he wrote his articles and presented them to the fraternity without price; nay more, when he found they were creating considerable stir he very gladly, at his own expense, went to many conventions and demonstrated his ideas.

James Inglis was undoubtedly the father of the great pictorial movement that influences the professional photographers of this country to-day, and this art movement is the grand old man's greatest monument, and he personally, were he alive, would care for no other recognition.

Pirie MacDonald and I were discussing this idea a few weeks ago when he remarked that, though this was undoubtedly true, there was another side, and he felt that the photographers of this country were under obligation to the memory of James Inglis, and that since it was at his suggestion the articles were written he felt it was the proper thing for him to make another, and it was this, that since I had been so closely associated with Mr. Inglis in the propaganda of artistic lighting it was but fitting that I should take charge of a movement to erect a suitable memorial over his grave. He proposed that I give an opportunity for every professional photographer in this country who felt that he had been benefited by the teachings of Mr. Inglis to contribute the sum of \$1 toward a monument, and that no larger sum be accepted from anybody, and he forthwith placed in my hands the first contribution. I need scarcely say that I gladly undertook the duty thus offered me.

The first step was to secure the consent

of Mrs. Inglis and the children, which I am glad to say was very willingly granted.

It is not intended either by Mr. MacDonald or myself that an elaborate monument should be erected, for we feel that a simple stone or tablet bearing a few well chosen words will be sufficient. It will be the sentiment behind the act that will count, not the act itself. We consider that from one to two hundred dollars will be enough, and we invite prompt contributions of \$1 each.

All contributions should be forwarded to me at my home address, Box 82, Glencoe, Illinois.

F. DUNDAS TODD.

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The American Annual of Photography

Tennant and Ward, New York, advise us that they have taken over the publication of the well-known *American Annual of Photography* from its former owners and are now busy with the preparation of the 1908 volume, which will be edited by John A. Tennant. Good as the *Annual* has been in past years, the new owners desire to make the 1908 issue better than ever—more useful in its information and more attractive in its illustrations. In this they ask the co-operation of all photographers in the shape of articles dealing with photographic experiences or pictorial work of unusual interest. Correspondence or contributions for the *Annual* should be addressed to the Editor of *The American Annual*, Tennant and Ward, 287 Fourth avenue, New York. As the book is made up during the summer months, contributors are urged to send their articles or pictures with as little delay as possible.

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Hand Camera Notes

A good hand camera will pick up bits of scenery as quickly as a hen picks up meal.

A good hand camera can catch nearly everything but the measles or a cold.

A camera that causes profanity is a bad camera.

Steadiness is next to godliness in using hand cameras.

Shaking leaves and shaky hands will not produce good photographs.

There are many things much in use which are not of much use.

It is the trifles that count in life, and the new trifle on the Kodak films will save you a lot of bother. In our advertising pages the Kodak folks tell you all about it, and the hint given is a good one.

The Photo-Beacon has been combined with *The American Amateur Photographer and Camera and Dark Room*, and instead of using all these titles, the publishers have adopted the name *American Photography*, which makes its initial bow this month.

Burke & James, 118 W. Jackson Boulevard, Chicago, have just placed upon the market an improvement upon their Igento Automatic Tank. The new tank is so arranged that plates may be developed, fixed and washed without handling, and the improvement in the new tank allows this to be done. The makers will be pleased to tell you more about tanks and tank developing if you write them.

The new art catalogue for this year of the famous Premo line of cameras contains so many useful hints that you should ask your dealer for a free copy. As the books are in such demand he may be out of them, but he has the Premo goods, and that tells the story. The Rochester Optical Co., 501 South street, Rochester, N. Y., will send you a copy of the book if you make your wants known to them.

If a print is not properly trimmed and mounted, over half its beauty is lost. The right tools are essential, but nothing enters more into the satisfactory mounting of prints than to have them properly trimmed at the offstart. The best trimmer on the market for your needs is the "Popular," made by the Milton Bradley Co., Dept. 4, Springfield, Mass. If you want to know more about print trimmers, ask the makers for a descriptive circular.

Many cannot practice unless they know, but they know in vain if they practice not.

Thank the showers for those lovely summer flowers.

The Bausch & Lomb Optical Co., Rochester, N. Y., have begun the publication of *The Prism*, an interesting little magazine which they intend to publish monthly. To all who may be interested in good and practical lens talks they'll be pleased to send it free of charge. The June issue is a good one, and it says a little, but it says it strong.

From Geo. Murphy, Inc., 57 E. Ninth street, N. Y., we are in receipt of samples of "Probus" Preservative Paint, a Royal Carbide Developing Lamp, and a Non-Slipping Printing Frame.

"Probus" Preservative Paint is waterproof and a protection against leaks, a preservative for wood, iron, and a strong resistant against acid and alkali. Invaluable for dark rooms, closets, sinks, trays, thus being adapted to the photographers, photo-engravers and chemists.

Royal Carbide Lamp. This lamp, supplied with material for six hours' use, produces a bright, steady flame without heat; no gas or oil needed, and always ready, and for a developing lamp, one of the most useful produced. The lamp can be used for printing by removing the ruby chimney, and you have a strong, powerful white light for printing purposes; thus, with the Royal Carbide Lamp, you have a developing lamp and a printing lamp.

Non-Slipping Printing Frame. This printing frame is supplied with a non-slipping device, so that when the print is placed in the frame with the negative it remains stationary and avoids all possibility of any slipping, a complaint that has been made many times against printing frames.

The above firm will be glad to furnish additional information upon request.

The Highest Stack in America

Herewith we show a picture

every department of our film plant. Years of experience, ready access to the formulæ and methods of the best plate makers in the world, special machinery and special building at no matter what cost—all these are at the command of our film makers, all of which accounts for the fact that we are years ahead of any competitor in the turning out of film, accounts for the fact that Kodak film is the only film rated by experts as equaling in speed the Seed 27 plate.

But this article was to tell about the stack. The figures are interesting. In the first place, it is 366 feet in height, the highest stack in America, and it rests on an octagon foundation which is 23 feet deep to bed rock, is 40 feet across the flat sides of octagon at base and 30 feet at top. The base contains approximately 13,000 cubic feet of concrete and weighs 600 tons. The chimney proper is a round shaft built of hollow radial brick. The outside diameter at the bottom is 28 feet, and at the top is 11 feet. The inside diameter at the bottom is 19 feet, and at the top 9 feet. It is lined on the inside with acid-proof brick and cement 4 inches thick, leaving a two-inch air space. The lining is laid in sections 20 feet high, supported on corbels from the stack. The smoke opening is 12 feet, providing for 2,400 horsepower boilers, and the acid fume inlet, 4 feet by 4 feet, is for sucking away the acid fumes from the chemical manufacturing departments. The bricks used in stack are

radial in shape and have hollow air spaces perforated in them. They are about 5 inches high and 6½ inch face. The length of the bricks varies from 10½ inches long to 4½ inches, there being five different lengths used. The stack is provided with lightning rod having four carbon points, and is equipped with an iron ladder on the inside and one outside. The total weight of the stack is about 6,400,000 pounds, or 3,200 tons. The letters "Kodak" on the stack are 7 feet

3 inches high, and are spaced 9 feet 9 inches centre to centre, the bottom of the lower K being 204 and top of the top K being 250 feet above top of foundation."

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Folmer & Schwing Co., of Rochester, announce a new graflex, which is called the Press Graflex, and which, as the name implies, is designed for the press photographer.

The Press Graflex is made in the 5x7 size only, and is of the non-reversible type. It is fitted with two tripod screw plates and may be used on a tripod in either a horizontal or vertical position. The telescope side arms are made long enough to give 15 inches focal capacity, and the new Press Focal Plane Shutter which carries the curtain roller back of the focal plane allows this camera to accommodate lenses of from 7 to 14 inches equivalent focus, permitting of a wide range of lenses for fine situations, or the use of long focus lenses for track or field work. The minimum focus of lens which the Press Graflex will make is 7 inches.

The tension roller is operated by a clock spring, which may be speeded up to 1-1500 part of a second, or lowered to 1-5 of a second. Slow instantaneous exposures can be made by setting the curtain aperture index at "0," handling the camera the same as for regular instantaneous work, as the mirror opens the exposure as it swings upward out of the cone of light, automatically tripping the curtain, which terminates the exposure. Time exposure of any duration can also be made.

The focusing hood is large and spacious, giving a full view of the field, with a complete shield fitting the contour of the face, permitting the operator to view the image on the focusing screen, right side up, with the greatest of ease.

The camera is opened ready for focusing by pressing a small lever placed near the end of the handle, conveniently near the right thumb, when carrying the camera. The cover operating the focusing hood is likewise opened automatically, and the construction of this cover is such that the camera may be carried ready for use while it is open.

The price of this camera without lens is \$110. A complete descriptive price list will be mailed on request.

Different investigators have repeatedly shown that the most powerful intensification is that obtained by the Uranium process. In his book, *Die Tonungsverfahren von Entwicklungspapieren* (Methods of Toning Developing Papers), Sedlacek goes into the matter in a very thorough and scientific manner. The principle on which this method depends is not, as is generally supposed, a coloration of the silver deposit by the chemical substitution of red uranium ferricyanide for some of the silver; for, besides this, a physical deposit of the uranium salt takes place, as he shows clearly by means of micro-photographs. The effect of this physical deposit is a strong intensification and a very coarse-grained image. This fault, from the point of view of toning, he claims is mainly due to the use of a disproportionate amount of ferrocyanide of potassium in the formula in ordinary use. Furthermore, the intensifier as generally prepared has no keeping qualities and rapidly turns brown after mixing. He suggests:

| | |
|--------------------------------------|----------|
| Water | 100 c.c. |
| 10% sol. Uranium Nitrate..... | 5 c.c. |
| 10% sol. Ferricyanide of Potash..... | 2 c.c. |
| 10% sol. Potassium Oxalate..... | 5 c.c. |
| 10% sol. Hydrochloric Acid..... | 1 c.c. |

Practically this amounts to 8 grains of Uranium Nitrate, 3 grains of Potassium Ferricyanide and 8 grains of Potassium Oxalate, each dissolved in an ounce of water and, after mixing, adding 2 drops of Hydrochloric Acid. Made in this manner the solution is of a yellow color and has good keeping qualities.

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The following announcement, just received from the Eastman Kodak Co., will be of general interest:

"We make the first prize in our Photographic Advertising Contest \$1,000 because we want to prove to the world that there are men who can furnish us with photographs that are better, from an advertising standpoint, than anything that can be drawn.

Photography is already taking an important part in advertising. Every issue of the great magazines shows how the advertiser is making use of photography in exploiting his wares. But there are undeveloped possibilities. In advertising there

is work for both the portrait photographer and the commercial photographer. The man who has a patent churn turns to the commercial photographer for a picture of that churn, but in developing his business he is likely to turn sooner or later to the portrait photographer for a picture of an attractive girl operating that churn. For the professional photographers who can combine good clean photographic work with an advertising idea there is good business at their own price.

For the double purpose of demonstrating the possibilities of photography in advertising, and at the same time securing for ourselves a series of superior pictures to be used in our Kodak advertising, we are offering Fifteen Hundred Dollars in cash under very simple conditions.

The work will, we believe, prove interesting to every lover of the art, and is likely to prove profitable by leading up to a new and as yet uncultivated field. Besides, the prizes are worth while.

1. Each picture is to contain a figure or figures, and is to be suitable for use as an illustration in advertising the Kodak or the Kodak system of amateur photography.

2. Each entry to consist of three pictures 8x10, or larger.

3. *Prints only* are to be sent for competition—not negatives.

4. Prints must be mounted, but not framed. (Mounts should show about one inch margin.)

5. No competitor will be awarded more than one prize. (This does not prevent a competitor from entering as many pictures, in sets of three, as he may desire.)

6. Due and reasonable care will be taken of all non-winning prints and, barring loss or accident, they will be returned to their owners at our expense, but we assume no responsibility of loss or damage.

7. The negatives from which all prize-winning prints are made are to become the property of the Eastman Kodak Co., and are to be received by it in good order before payment of prize-money is made.

8. Contestants who are awarded prizes must also furnish to us the written consent of the subject (in the case of a minor, the written consent of a parent or guardian) to the use of the pictures in such manner as we may see fit in our advertising.

9. All entries should be addressed to
EASTMAN KODAK CO.,
Advertising Department. ROCHESTER, N. Y.

10. In sending pictures, mark the package plainly, "Photo-Advertising Contest." and in the lower left-hand corner write your own name and address. Then write a letter as follows:

*I am sending you to-day by ^{express,}
charges prepaid, prints. Please enter
in your Photo-Advertising Competition.*
Yours truly,

11. The name and address of the competitor must be legibly written on a paper and enclosed in a sealed envelope in the same package in which the prints are forwarded. There is to be no writing on prints or mounts.

12. We will promptly acknowledge the receipt of pictures, and when awards are made, will send each competitor a list of prize winners.

13. Only recognized professional photographers conducting studios will be allowed to compete.

14. This contest will close November 1st, 1907.

FIRST PRIZE.....\$1,000.00

SECOND PRIZE.... 500.00

As photographic excellence and advertising value are both features of importance, it has been our endeavor to secure, as judges, men who are recognized as among the leaders in their respective lines. In this we have been fortunate, and we are pleased to be able to announce that the following-named gentlemen have consented to act:

Mr. E. W. Spaulding, Mr. Henry D. Wilson, Mr. Pirie MacDonald, Col. Theodore C. Marceau, Mr. Geo. H. Hazen.

To the photographers of America Col. Marceau and Mr. MacDonald need no introduction. In the business end of the publishing world the other gentlemen are likewise well known. Mr. Spaulding is advertising director of the *Ladies' Home Journal* and the *Saturday Evening Post*, Mr. Wilson directs the advertising end of the *Cosmopolitan*, Mr. Hazen of the *Century*. All of them are ripe in experience—progressive. They are just the kind of men to weigh accurately the advertising value of an idea.

The jury will be instructed to award the prizes to those contestants whose pictures, all things considered, are best adapted to use in Kodak advertising.

As reproductions of the pictures will often be in small size, too much detail should not be introduced.

Pictures for reproduction should be snappy—vigorous, for they lose much by the half-tone process.

Where apparatus is introduced, it should be up-to-date. If you haven't the goods, you can borrow.

There may be possibilities in introducing the Kodak Tank Developer idea.

A girl? If she is attractive, refined, by all means, yes—unless you think you can better impress the judges in some other way.

It is highly probable that we shall want to secure some negatives aside from the prize winners. In such cases special arrangements will be made.

EASTMAN KODAK Co.,
Rochester, N. Y."

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Reduction with Ammonium Persulphate

However carefully a photographer may work, there are many instances in which it is difficult to secure the degree of softness in gradation that is desirable. The subject may be harsh in character, or it may be difficult to give sufficient exposure to secure softness, and it is in such cases as these that the value of such a reducer as ammonium persulphate is felt. Harshness in the negative may be removed and softness in the balance of tone substituted.

By adopting the formula and method of working here given, full advantage may be taken of the valuable qualities possessed by ammonium persulphate. And the disadvantages and risks which usually accompany its use are entirely removed. A stock solution should be prepared:

Ammonium Persulphate.. 1 oz. 50 grams
Sodium Sulphate90 grs. 10 grams
Sulphuric Acid45 min. 5 c.c.
Water to make..... 9¼ oz. 500 c.c.

This forms a ten per cent. solution of ammonium persulphate, which will keep indefinitely in a well-stoppered bottle.

For use the solution requires diluting, the strength varying with the plate. With many plates on the market the working solution

will consist of one part of the stock solution to nine parts of water, containing, consequently, one per cent. of ammonium persulphate. With some negatives, mostly those in which the gelatine is very hard, a stronger bath may be necessary. One part of the stock solution may be taken to three or four parts of water, forming a two or two-and-a-half per cent. solution of ammonium persulphate. The weaker bath should be used when practicable. Some negatives respond readily; others are not nearly so amenable to treatment. Where difficulty is experienced the negative may be immersed for a few minutes in a dilute ammonia bath, about one part of strong ammonia to eighty or one hundred of water. It should then be well washed before reduction is attempted. In any case it is desirable that the negative should be soaked in water for some time before reducing.

To reduce density the negative is immersed in the diluted persulphate solution and the dish rocked. Soon after the negative is placed in the solution a milkyiness is seen flowing from the denser portions, and this is an indication that the solution is working satisfactorily. The action is continued until it is sufficiently reduced, when the negative is removed from the solution, washed rapidly in two changes of water and placed in a plain solution of hypo or an ordinary fixing bath for about ten minutes. It is then well washed in the usual manner and dried.—*Photo Notes.*

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Toning Platimums with Uranium

I.

Uranium Nitrate..... 48 grs.
Glacial Acetic Acid..... 48 ms.
Water 1 oz.

II.

Potassium Ferricyanide.... 48 grs.
Water 1 oz.

III.

Ammonium Sulphocyanide ½ oz.
Water 1 oz.

For use: One part of the above should be used in 100 parts of water. During toning the dish must be rocked continuously. After the desired tint has been reached the print must be rinsed in water which has been acidified with a few drops glacial acetic acid.

The toning may be removed by immersing the prints in a very dilute solution of ammonia.

Platinum
do
273

EDITOR OF THE CAMERA:

Dear Sirs In cases of poisoning from Metol, the first recommendation should be to avoid dabbing the fingers in the solution in search of plates or the elusive film. This can be effected by fashioning the handle of a discarded tooth-brush, with the aid of a file, into a plate lifter, or, in case of films, a spring clothes pin, made of wood, can have its point planed down to a chisel edge, and for those who develop film in the *strip*, two of the little metal spring clips can be attached to each end of the strip. If the above advice is ignored and Metol poisoning ensues, it can be cured by the use of "Resinol Ointment," which can be procured at any drug store.

I should be glad to know of the effect of "Resinol Ointment" in a case of the more serious Bichromate poisoning. I seem to be personally immune, and advanced amateurs are so scarce here that I cannot find a subject for experiment.

JOHN N. BROWN.

[The following formula is about the same as the ointment mentioned, and can be mixed by any druggist:

| | |
|----------------|-------|
| Ichthyol | 1 dr. |
| Palem of Peru. | 1 dr. |
| Lanoline | 2 dr. |
| Vaseline | 3 dr. |
| Boric Acid | 2 dr. |

A drop of Oil of Lavender or other essential oil will destroy the odor of the mixture.—ED. CAMERA.]

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EDITOR OF THE CAMERA:

Dear Sir: In your issue of June, in my story "Reflected Through the Hood," there appears, on page 209, in the second paragraph from the bottom of the page, the following:

"Yet I now make snap shots indoors all the time—whenever I want to—and on bright days stop down to f16 and give a hundredth of a second exposure—and it really is a hundredth—and get full time."

This is obviously a printer's error, or an error in the manuscript, yet I have heard from it a number of times from people who evidently took it seriously. What was intended to be stated was this: I can, and do, make snap shots indoors, using the focal plane shutter and a fast lens. Period. Paragraph.

I can, and do, make pictures *out doors* in bright sunlight, with the lens stopped to f16 and the shutter working at a real one-hundredth of a second, and obtain fully-timed negatives.

I do not—nor does any one else—make indoor snaps at any such speed or at any such stop. I have made indoor pictures with as swift a speed as one twenty-fifth of a second, using a stop of f5, and usually reduce this speed to one tenth of a second. Even then particular attention must be paid to lighting. I hope to present this subject some time in a paper of its own. Meanwhile, will you please correct the error by publishing this letter where it will be seen easily? Faithfully yours,

C. H. CLAUDY.

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What Should Be The Life of a Silver Print?

At the present time there are more processes, and modifications of them, for the production of silver prints than at any period in the history of photography. One of the chief claims put forward by their different advocates is that with their methods of working them they yield permanent results. In proof of this it is sometimes stated that the prints have lasted two or three years and show no change. Is that to be taken as a proof that they will not change later on? Theoretically a silver picture is not a stable one, yet we have it in evidence that some silver prints made thirty or forty years—even longer ago than that—are still, to all appearance, as good as on the day they were produced. This may be taken as a proof that silver prints need not be so fugitive as some would have us imagine. If only a single print had stood the test of time for forty or fifty years—and there are some still intact that were made in the very earliest days of photography—there is no reason why every one, if made under the same conditions, should not be equally as

permanent. No one will question, we think, that there are more silver prints being produced daily that will in the very near future pass into the "sere and yellow leaf" than there ever was before. But is that the fault of the modern processes producing them or is it due to those who practise them? We unhesitatingly say to the latter rather than to the former. By far the larger proportion of silver pictures now made are by gelatine emulsion processes. The bromide process, for example, should yield very permanent pictures if worked under the conditions necessary to secure them, but they are too often ignored through ignorance or neglect on the part of the workers. Bromides are frequently toned, and sometimes by methods that are certainly conducive to fugitiveness. But that cannot be charged to the process itself. The gelatino-chloride process, again, should yield stable results if worked with care and judgment, but very frequently it is not; just the reverse. The prints are often very imperfectly fixed. Combined toning and fixing is one very prolific source of instability, not because the method itself is so bad, but because the bath is often used long after it has been exhausted of its gold, and also by reason of the desired tones being sometimes arrived at long before the prints are properly fixed. However, we are pleased to see that the majority of the makers of the P.O.P.s now rightly discourage the use of the combined bath. Collodio-chloride, theoretically, should be, perhaps, the most permanent of all printing-out processes. Yet we frequently hear of the prints breaking out in spots soon after they are finished, this being generally due to their being toned with platinum, and the acid toning bath not being removed before the prints are put into the fixing bath. Here again it is not the fault of the process, but of its workers.—*The British Journal of Photography*.

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Did you ever hear of the "Modern Order of Angelo?" This is not Michael-Angelo, but is the story of a platinum paper upon which modern art may be depicted to such a degree that it appeals to the connoisseurs as well as the earnest workers in photography. All dealers have the Angelo Black and White Platinum Paper in smooth and rough finish.

Second Exposures

How often has it happened that we have thrown away accidentally exposed plates, or the plates upon which two views have been taken?

Such plates as these, however, are not useless, and should be stored away undeveloped in a perfectly light-tight box until an opportunity arises, when they may be brought into very useful service.

Suppose you find that you have to copy a print or picture and have not a single slow plate in the house. Such a thing may happen, as any photographer will own in his more confidential moments. Now is the occasion for which the wrongly exposed plate is being kept.

Take it to the dark-room and soak it for ten minutes in a solution of mercury bichloride (one ounce in ten ounces of water). Wash for a quarter of an hour under the tap, then place it for two or three minutes in an ordinary amidol developer. Rinse once more in a stream of running water, and dab off the superfluous moisture.

While the plate is still wet put it into a dark slide and expose. The exposure will need to be about one hundred and twenty times as long as it would have been for the plate in the first exposure. Although this sounds rather a lot, it is not so very formidable when dealing with plates of the speeds that are common in these days of hurry. Thus, if a second would be the exposure required for a new plate, the renovated one will take at least two minutes—not a very great time for copying a painting or engraving. The use of the amidol bath is found to greatly accelerate the action of light, and if it be omitted the exposure would have to be considerably protracted.

Developed in a rapid bath the image will take rather longer than usual to reach full density, but the resulting negative will be found of excellent quality, free from fog, well covered in the lights, and clear in the shadows.

The method may be applied to a very rapid plate which has not been exposed at all, if a slower speed be required for any purpose at short notice. — *The Amateur Photographer*.

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A shake of the hand is all very well, but not when holding a hand camera.

Double-Coated Plates and their Development

By M. A. SEED

of M. A. Seed Dry Plate Co.

By some I am asked to talk on double-coated plates and by others on developing them. I suppose you all know how double coated plates are made, but it may not be amiss to go over it briefly, so you may thoroughly understand how they are manufactured, and I think it will help you to understand better how to work them. All non-halation plates are not double-coated. Some are made by putting something on the back—a black backing—and they are very good, too; that is, they prevent the light that escapes through the film from diffusing. There is another kind which contains a dye in the sub-stratum, which is also pretty good, and answers the same purpose; but a double-coated has other properties besides preventing halation. The first coat that is put upon these plates is a slow emulsion, or what we call 23; the second coat is put on after that is dry. This is what we call a 26x. These plates are intended for use where there is a higher range of light and shade. It is not required in all subjects. Suppose you take an interior, and you have the windows before the instrument; it is a very powerful light, but in the same room you have deep shadows. What you want is to retain everything that the camera sees, right in the films. You want to give sufficient exposure so as to get the definition in the deeper shadows, and at the same time not lose it in the strong lights. You will understand that light, as it penetrates the film, continues to penetrate as you expose. You must give sufficient exposure to get in the deeper shadows. If that exposure has been so long that the strong light has gone through, we have lost a proportionate amount of detail in the high-lights. Suppose we divide the strong light into five. We will say the strongest light of all has escaped. The second has escaped, the third, fourth and fifth has gone just through the film. The result is, you have a strong light without definition, or which is blended into

one, giving a flat high-light. But if your film checks the force of that high-light, the strongest light penetrates into the first film, say half through; the second, quarter through; the third just touches it; the fourth and fifth in the upper film, and all the middle tints and detail in the shadows also in the upper one. When you develop you retain everything. So, if you had a strong light coming through the windows and shining on some statuary, you would get modelation in your strongest lights, because it is all there and nothing escapes. In a single-coated plate that light would simply be a flat mass of light and appear as a piece of white paper pasted on. And so, a snow scene. You would not be able to see those delicate intonations, those pretty little shadows; it would be a mass of bare white. But, as I said before, retain everything in the film, and you get it in the negative. There is another property which we did not at first understand, and that is what gives this plate a greater value. What I mean is this: it contains isochromatic qualities.

We will suppose a subject containing blue, yellow and red, and we expose sufficiently long for the red, of course over-exposing the blue, which has penetrated the upper or 26x film and to a certain extent into the lower or 23 film. This over-exposure has produced in the upper film a reversal, reducing the strength of the blue to that which is alone produced in the lower film, the yellow not having received sufficient exposure to produce a reversal has increased the strength, having caught up to the blue or even becoming stronger. The red also has had time to gather a certain amount of strength. So that in photographing paintings a double-coated plate should be used. We have found it so, and we have made very long exposures of interiors, and found the windows were transparencies, the street scene perfectly transparent through the films. The inside was all right. This is the plate to use if you have flowers to photograph, or engravings, because it gives you the strong lights that you want there.

You want a copy of an engraving not to be flat in the lights, but pure white, and you want the shadows bright and clear;

this you can get also. But to secure the proper effect from a double-coated plate, it is necessary to have a developer made accordingly. You do not want a developer to act on the upper film too vigorously. You want a developer that will allow time for the upper coat to be penetrated and to act on the under coat sufficiently to bring out all there is. All that is necessary, then, is to treat the normal developer with double the amount of water. It takes longer, but it allows the developer to penetrate gradually, and after it has entered the surface, the action is more rapid. It goes into the under coat and brings out every gradation of tone. There are, however, chances for failure in using double-coated plates. We have received pictures said to be made on these plates that showed a tremendous amount of halation, more even than was produced on a single-coated plate, leading the photographer to believe that there was no advantage in the use of these plates. Upon investigation it was found that the lens was not absolutely clean, and being pointed towards a very strong light, there was a diffusion of light in the camera, fogging to a certain extent the whole plate, but especially round the windows. Take your lens to sunlight and examine it, you will then see whether or not it is clean. If it appears at all smoky, take it apart carefully, but first spread out a clean sheet of paper, dust with a clean camel's-hair brush the lenses and rims as you separate them. Now make up the following solution:

| | |
|------------------------|----------|
| Water | 4 ozs. |
| C. P. Nitric Acid..... | 16 drops |
| Alcohol | 1 oz. |

With a tuft of absorbent cotton dipped in the above solution clean the lenses well and polish with a brush and chamois, which must also be absolutely clean and kept in paper, free from dust, to be used for no other purpose than for cleaning lenses. There is another cause for what appears to be halation. Suppose you are taking an interior having several windows, only a few of them, however, come in the picture. We will suppose you are taking an 8x10 plate in a camera of that size, using a short-focus wide-angle lens, some of the windows will be focused on the side of the camera and be reflected on that portion of the plate per-

haps just where there is a window. To prevent this, draw a screen sufficiently near to the lens so as to cut off all side lights that are not intended to be taken in the picture. One of our men experienced the difficulty above referred to while taking interior views of the beautiful studio of Mr. Steffens, of Chicago. In Mr. Steffens' private office there are two windows, but only one was seen in the picture, the negative showed immense halation around it, but upon investigation it was discovered that the mischief was done by the other window, the light of which passed through the lens and was focused, not on the ground glass, but on the bellows of the camera, illuminating the whole interior of the camera, but especially throwing a strong reflection on that part of the plate where the other window was. Another negative was made and it was perfect.

A great many are using non-halation plates for flashlight, and there is nothing better. But care again is necessary. The best place for a flash is not behind the instrument. But many say, if you don't go behind it it will shine in the instrument. Not necessarily. The best way is to put the flashlight as high as you can and as far to the right or left of the camera and as near to the subject as possible. You can shade your lens, then you will get a picture that will surpass daylight pictures, having a concentrated light.

Now we will consider development, but first let us examine our developing light with a small pocket spectroscope and we will find nine out of every ten ruby lights allow blue rays to pass through them, rendering the lights unsafe in proportion to the amount. A deep orange in connection with the ruby will generally make it all right. If the orange is not deep, take two lights. If you have the proper quality of light you may have it much stronger and work with much more pleasure than is usually the case, though we would here remark that strictly speaking there is no such thing as a non-actinic light. I would therefore advise care during the first part of development. Develop on one side of the light and not strictly in front. Don't lift your plate out of the developer until it is at least over half developed. Then

hold it up to the light as short a time as possible. Remember that the light one inch from the ruby glass is sixteen times stronger than it is four inches away and sixty-four times stronger than it is sixteen inches from. So you can see how quickly a very sensitive plate may be fogged by holding too long near the light. There is, however, less danger as the development proceeds, the above care is especially necessary with the Seed plate being to a certain degree sensitive to the yellow light. On this account it will be found that even if your operating room light becomes yellow in the afternoon or during the fall or winter seasons, that the Seed plate does not lose in sensitiveness.

Next to the developing light we will take up the question of water for making up the developer. First it must be free from organic matter, otherwise it will cause your developer to discolor rapidly and stain your negatives. Well water, free from iron, is good, so is melted ice, not what is termed ice water, which is simply ice with a lot of water added, but melted ice; it should, however, be filtered. Distilled water, of course, is the best, though much of the so-called distilled water is nothing but condensed steam, which has passed through iron pipes, consequently contains more or less iron; this should not be used. If, however, you have nothing but river or rain water, boil it, then cool and filter and it is all right.

Pyro should be pure, white, fine, sparkling crystals; it should dissolve in a few seconds. If you find it a dirty, dead white, giving you a muddy solution, and if it takes long to dissolve, reject it and get another sample.

The sulphite of soda should be pure white, clean, clear crystals. Purchase that only which is put up by the manufacturers in bottles. What is sold in bulk is often unfit for use, due to the action of the atmosphere turning it from a sulphite to a sulphate, in which condition it is entirely useless, causing the developer to decompose rapidly, prolonging development and producing yellow negatives. Test your sulphite with litmus paper to see if it is not alkaline. It should be neutral. If it is only slightly alkaline, however, neutralize with sulphuric

acid. The amount of sulphite you use must depend upon the color of negative you want. I consider the best color a brownish or yellowish black, not a blue black. The latter makes a very pretty looking negative, but not a good printer. You will find the definition in the shadows shown in the negative is lost in the print due to the blue color.

Sal-soda or carbonate of soda crystals should be clean and clear, not chalky. The water of crystallization will dry out if exposed to the atmosphere. It is not thereby unfit for use, but it is stronger in proportion to the amount of drying out it has received. If it has pulverized and dried to a white powder, one and three-quarter ounces are equal to four ounces of fresh crystals. So you can readily understand how there may be trouble with flatness and softening of the film in warm weather, if such a carbonate of soda is used. If the developer is made up with the use of a hydrometer, it makes no difference whether the sulphite of soda is in clear crystals or has melted on account of heat, or the sal-soda is in clear crystals or dry and chalky, as in water the specific gravity is not affected by these conditions. We might here remark that the larger the amount of organic matter contained in the water used for developer, the more sulphite of soda is required to obtain the desired color of negative. For instance, twice the amount is needed in St. Louis that is required in some other cities which have lake or mountain water. We had a communication from one of our demonstrators who had a controversy with a customer as to the best printing color for a negative. The photographer contended that a blue black was the better, but our representative said that a yellowish black would make a more brilliant print. Two negatives of the same subject were made, the yellowish one had a thinner appearance, but upon printing it was found that the flatter looking negative gave by far the most brilliant result, and thoroughly convinced the photographer that the latter was to be preferred. Oxalate and iron give just the color of negative that is not a good printer. But there are other conditions which affect the color of the negatives, for instance, de

veloping in an iron tray, where the enamel is cracked and the iron exposed to the developer; the making up of pyro stock solution in too large a bottle, allowing too much air in the bottle to act on the solution, causing rapid discoloration; but above all, the temperature of development has to do with the color of the negative. If cold, the negative will be blacker; if too warm, more rapid decomposition of the developer will take place and cause more or less stain. In winter the room should not be allowed to get colder than 75°; in summer, of course, you cannot keep it too cool. The more uniform you keep your developer, the more uniformly good will be your results. I was called to a gallery some time ago—they had trouble in developing. The dark room was on the roof with a thin board partition, the sun shining full upon it, and no ventilator. The temperature of the dark room was about 100°, and I am sure in winter it must be difficult to keep things from freezing. Under such conditions uniform work could not be done here. It is just as certain that the photographer should comply with certain required conditions to be successful, as it is for the manufacturer, who must control conditions of air and water, both as to temperature and purity. River water is never uniform as to purity. In winter, when the country is frozen up, we generally have nothing but spring water, but during the rainy season surface water is washed into the rivers and all kinds of decomposed animal and vegetable matter, carried with it to a greater or less degree, causing not only the developer to act variously, but producing bubbles in the developer, making round pin-holes from the size of a pin-head to the eighth of an inch. But, as we have said before, if this water is boiled and filtered it is all right. A clear lens, pure chemicals, uniform temperature, uniformly pure water, and your difficulties will be very few. I have met with photographers who were nearly beside themselves on account of trouble. Just through ignorance of some little requirement they have to make so many resittings and ruin their reputation and trade. It is a great pleasure to us to get such a one right without the least additional expense. We have made many happy in this way.

At a convention of the Photographers' Association of Michigan the following questions were asked me regarding double-coated plates, and as they are interesting in many ways they will naturally interest the readers of THE CAMERA:

Q. I would like to ask what temperature you consider best for developer.

A. The winter temperature should be about 75 to 80; the summer temperature could be as low as you can get it. For instance, in winter you could commence to develop with a warmer developer, because everything is cold and it will get colder as you proceed. In summer it is the reverse; you commence with a cooler developer and it gets warmer.

Q. Do you prefer Pyro and what is the best formula for double-coated plates?

PYRO FORMULA FOR DOUBLE-COATED PLATES.

NO. 1.

Distilled or good Well Water.....10 oz.
Sulphite of Soda (crystals)..... 4 oz.
Pyrogalllic Acid..... 1 oz.

NO. 2.

Water10 oz.
Sal Soda (crystals)..... 4 oz.

TO DEVELOP TAKE OF

No. 1.....½ oz.
No. 2.....½ oz.
Water 8 oz.

A. I do not think Pyro can be improved upon. Many object to it because it stains the fingers, but if you have a good quality of sulphite it will not stain so badly as the poorer quality. It is less likely to sicken the film. You will find a negative developed with Metol is very smooth. The objection to Metol is it is poisonous to some people; if you feel a tingling in your fingers, stop using it. There is a way, however, that makes it safe if you will take the trouble. Take beeswax and a little ether, make a solution and rub that over your fingers, and then you can use the Metol without any danger. A photographer not long ago, using Metol and having used it for some time, was asked: "Does it hurt your fingers?" "Not at all." "What is the matter with your wrist?" He answered: "I have had that for five months, and my whole arm is covered with it." "When did you commence to use Metol?" He said: "It is about five months ago." The fact was it was affecting his arm, not his fingers. But by using this

beeswax you are assured. Many it does not affect at all.

Q. How about the fixing bath for double-coated plates?

A. Our regular Hypo bath is all right, but it takes more than twice as long to fix the negative. In the development of a double-coated plate you must not be deceived with the intensity of it. You start with two films and it looks very intense. You must carry development considerably further than a single film negative. I think it is important for double-coated plates that the fixing bath should be renewed pretty often and not use an old bath; and again, on account of the two coats, considerable washing should be done. It has to penetrate to the bottom of the under film, and that takes a little time.

Q. Is an hour long enough for washing?

A. Plenty; I think half an hour is long enough in running water, but an hour soaking would be sufficient. A word in regard to development in hot weather. A photographer came to our factory from South America, and I remarked to him: "Don't you find it difficult to get ice there?" He said: "We don't get any ice." "What is the temperature of your room?" "Ninety to

one hundred degrees." "Have you any difficulty?" "Not at all." "What do you do? Use alums?" "No." "What then?" "I simply mix up a new fixing bath every day. I make up a new bath and put my stock solution in that, put it in my tray, cool it off and develop my negatives, and that new fixing bath hardens the film." You may make an old fixing bath as cold as the new one and it will not harden the film. The new hypo has that property of hardening. "I have no trouble with my negatives."

Q. Did I understand that an alkaline fixing bath was the best?

A. I think it should be as near neutral as possible. There is one great danger of an acid fixing bath; if you develop a plate and do not wash it sufficiently you can see the action of an acid and an alkali that takes place in the film. In the fixing bath you have a great deal of alum that hardens the surface of the film. The action of the acid and alkali is going on beneath and forms a gas, and that gas cannot escape on account of the outer surface being hardened, ruining the negative. But if the negative is well washed before being placed in the fixing bath there is no danger.—*Reprinted, by request, from THE CAMERA of December, 1899.*

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Balance—Fourth Paper

By H. R. POORE

ANY discussion of the subject of balance in pictures is incomplete without a word to the doubters and to those who do not think and therefore cannot doubt. The doubter deserves an argument, but the unthinking man is such a problem that opinions differ as to whether, like Ephraim, he be let alone with his idols, or summarily arrested and put under bonds. The unthinking man being usually a talker, the latter would prove the greater relief.

As to the doubters, there will always be found persons who "do not believe in the principles of art," either because they produce good work, unconscious of a knowledge of them, a native art sense guiding toward these principles; or because they are incapable of appreciating the presence or absence of these in their own work and vaguely realize that some things they do are better than others, call it luck and let it go at that.

Said one who had been elevated to a controlling position in an important club: "I do not believe in all this talk about construction. Good art is good work." This sentiment concerning workmanship represents the attitude of a fair number of people interested in photography, pinning their faith to the mechanics thereof, discarding the old instrument if the market affords a better, hanging to the secrets of the developing tray or to the magic of the paper, supposing that these things have to do with art. No more are they than the pencil, paint and canvas to the painter. He must supply the other.

Says Professor Ross: "We must not believe that appreciation is easy. It is true the recognition of harmony is instinctive and spontaneous, but untrained people recognize it in only a few simple and obvious forms. Harmony in its higher forms—the order of a great number and variety of terms and of different principles in combination—lies altogether beyond the appreciation of



untrained people. It is only as we are trained, exercised and practiced in the use of terms and in following principles that we rise to the appreciation of great achievements. The sense of harmony which we all have in a measure needs to be exercised and developed. The spontaneity of undeveloped faculty does not count for much. Let no one believe that without study and practice in design he can recognize and appreciate what is best in design."

The speediest argument to bring this point to its proper importance is the *reductio ad absurdum*.

Let one attempt a composition in violation of the principles which have been discussed for more than a year in these pages, and the result will be too bad for even the unthinking man to tolerate. If such a result then is accounted bad, one with fewer sins against unity will be, in degree, better, and still better as the sins become fewer. This is logic, and requires no knowledge of art for its comprehension.

Again, suppose the same subject to be executed from five different points of view. Out of this number one will be accounted best and another next best. It could not be possible that all be equally good. Let the subject be never so simple—a house—and the judge a practical, artless real estate agent who has this house for sale. He will quickly decide which of a number of views gives the best impression of the house. The sculptor knows full well that his statue must have its best and least favorable points of view, knows from experience that his effort in large measure is directed to making it compose in its lines from every point of view, that it becomes to him in most cases a question of compromise and sacrifice for the sake of a few positions. The painter will adjust his easel for the most favorable point of observation and eliminate and substitute when necessary.

In all these cases selection enters in, proving again that *one thing is better than another*.

If this be granted, the case against the "good work is good art" man is lost. Nothing more is necessary than to remind him that every effect must have a cause; and cause and effect is just as inherent in art as in nature, though less evident. Its study in either case is scientific.

THE BATHING NYMPH

ELSHEIMER

It is, not likely that a recommendation on the part of the writer to approach the subject of composition over the basis of pure design would be tolerated by many of the readers of THE CAMERA. Not only the doubters and non-thinkers, but even the willing workers would soon be lost in the tall timber. Should any crave this experience let him avail himself of Denman Ross's Theory of Pure Design, wherein harmony, balance and rhythm in their relations to line, mass and tone are dissected in their last analyses. A superficial glance at this contribution to constructive art is calculated to lead the doubter to believe that as a theory at least there is something in it. With this admitted as a basis, he should then rise quickly to the higher and more practical level of the every-day principles which all of the arts in common will reveal. A book on pictorial composition is not necessary to one who has a good rhetoric. If he studies this with a wide horizon and in search for the principles, he will soon be enabled to decide whether his pictorial work has unity, balance and harmony.

Of the many examples which the field of pictorial art affords violating some of the best-known principles of art, but three are here introduced. "The Return to the Castle" palpably displays several faults. The idea of it is a group of horses returning after the battle to the gate of the castle. As we view it, however, there is found also a *complete* landscape attached, as an element of support, to something less complete. The castle is introduced as a fragment. Its remaining lines are conjectural. Not so with the landscape, whose lines, occurrences, elevations and masses are exceptionally unified. The group of horses, however, as separate measures, has been arranged with much discretion; the white centralized and given further prominence by the horse on the left, which is sacrificed to him. The horse beyond, besides the indication of his glance, away from the gate, that no response had come from within, is im-

THE PREACHER ANSLO AND WIFE

REMERANDT

portant structurally in breaking the direct procedure from the white to the last horse, and in also infringing the wall space. The horse in action announces himself a new arrival, indicating that the waiting group had been formed one by one.

In construction the group well reveals principality, sacrifice and inclusion, and subjectively these dumb beasts have expressed the plot of a story—an occurrence and its partial duration.

To save so much good, but one thing is needed—amputation. The picture has too much exit, and through its discursive possibilities the eye wanders, absorbed by the unit of arrangement in this part.

In "The Bathing Nymph," a landscape of good line and light and shade has been sacrificed as a background for a nude study in its left corner. The ingenuousness of her placement is on a par with her coming out on the wrong bank, the hickory holding her garments being on the other side of the stream. In this attempt at originality the artist fell into one of the most formal arrangements possible—two points at equal distance from the sides leading to two points near the centre and equidistant from the sides. These points connected would produce a pyramid in perspective. Besides this the want of a foreground tends to put the figure out of scale with the landscape.

To reconstruct so that the novelty of the positions might be retained and the whole made to conform with unity, one or two slight changes only are necessary: first, that the element of principality be brought in that we be saved the distraction of looking at two things of equal attraction at the same time. Let the nymph have this right and give her slightly more hold on the bank, more

space. Give her also a leading line beneath, the line of the bank. With this added the landscape not only balances better, but things are inaugurated for the principle of procedure. From the left side, then, the mental progress would first include the object on the extreme right, the clothes, and from that point attach the isolated tree and distant figure. The division of light and shade, the form and retiring lines of the background would then have, in a measure, some logical hold upon the foreground, and the objects would occur in sequence.

In these two portraits, by Rembrandt and Meert, a man and his wife are shown, together with accessories indicative of the man's occupation. About the same placement is noticed, the same proportionate space for figures and accessories. In the Rembrandt we are conscious at once of the unity of good composition, and in the Meert we feel two separated subjects. The distant marine, with its fishermen, is too complete to be accessory. The completeness, as such, of the book and candlestick is no less conspicuous, but in the latter case it is held in relation by its practical association of the space and line of the subject, while in the other association is entirely sentimental, the line of the bank being one of severation for the picture and of inclusion for each of its parts.

Portraiture, historic and modern, is full of this error in greater or less degree, from the college president with a complete view of his institution seen out of the window, to the portrait of a huge macaw on a tree, between the leaves of which may be seen his owner and family.

In the calculation which the artist must make for the balance of his picture, the weight on the long arm of the steelyard must lessen in ratio with its distance, a fact which the two portraits herewith makes plain, and a fact which dictates to the taste of the artist the attractive *degree* which he allows.

Elias Goldensky, Artist-Photographer



SOME ten years ago, down in the "slums" of Philadelphia, Elias Goldensky placed his sign of "photographer." But few thought that this modest Russian would achieve the success in photographic art that he has done in this short time, but when one understands his indefatigable method of working and the pluck and energy he puts into his work, he richly deserves the success that has come his way. At first he had a hard struggle to conquer the natural prejudice that a lover of art would feel in going into such a district for artistic work; the man, being a natural born artist, wanted and insisted on his subject feeling his individuality. To do this he had to make many sacrifices. The monetary consideration occupied second place. His art was paramount.

When Mr. Goldensky started out, he had never exposed a photographic plate, although he had spent five years as an artist-retoucher in a celebrated studio and had had a preliminary art training in Europe. He is self-taught and is a hard taskmaster for himself, but generous to a fault with others. If a less successful brother in photography wants any information as to how such and such an effect in lighting has been secured, he gladly takes the time to explain and makes the inquirer happy with his courtesy.

He is a man who particularly courts criticism, and is even now a regular exhibitor at the various exhibitions, profiting by the comments made upon his work.

We have watched Mr. Goldensky in his work and have profited much by the lessons received. First, the sitter is made to feel that he is not there to have his photograph taken—merely talking with a well-read man who is conversant with his pet hobby and one who is capable of maintaining his end intelligently. At the psychological moment, and at that moment only, will a plate be used, not only one, but as high as twenty-eight on one sitter if the occasion demands and the requirements of the artist wish it. Proofs are made from each negative, and they are submitted to the customer daintily bound into a portfolio, and they seldom fail to secure liberal orders from the majority of the negatives.

Owing to the man having no cut or bound ideas due to his first training, he is considered as being irrational by many. This is an erroneous idea, as he is so wrapped up in his art he seeks to obtain the acme in each sitting. We have known of cases in which men of wealth and large enterprises have gone to him for sittings. If he feels a little "off" on that particular day, or the sitters look a little tired or dragged, he will tell them plainly that he will not pose them and send them away, and they return to keep the next appointment. He says, "I want individuality and I want my subjects to feel that. If I cannot put my whole soul into the picture that I am about to make, I will not spoil my reputation nor will I disappoint my sitter by giving him something that anybody can make. I must have results and only the best, I don't care if I do not make a penny out of the sitting. They are after one of my creations, and that's what they pay for and that is what they must get."

STUDY

ELIAS GOLDENSKY

His skylight is really no skylight at all, being hemmed in on all sides by tall buildings, and, as he calls it, "in a dungeon." He employs a Percy King Light Controller in all his sittings, and, as he says, "I do not care if I only have an ordinary window, I can get whatever lighting or effect I wish with my light controller, and the quicker other photographers realize that curtains and the usual studio obstructions are a hindrance and will adopt modern methods, the sooner will they have success."

We regret that the half-tone process will not permit us to show the beautiful tonality in the Goldensky prints that are reproduced this month in our pages, we have endeavored to preserve all that is possible, but the results do not do justice to the originals. Our half-tone engraver is not an artist-photographer.



CARMEN

ELIAS GOLDENSKY



Distortion in the Pictures of Moving Objects

By C. B. Claudy

WHEN a photograph is made of an object which moves so rapidly that the image moves on the plate to a greater extent than one one-hundredth of an inch, one of two things, or both of them, happens. Either the whole image is blurred, or it is sharp, but distorted in appearance, or it is both blurred and distorted.

If any shutter is used—meaning either one working immediately in front of the lens, between the two elements of a double lens, or immediately behind the lens—the result of a moving image will be blur. In other words, the exposure has been too slow to stop motion. To increase the speed of the shutter is not practical beyond a certain point for two reasons; first, because the limit of speed of shutter blades is reached by the practical size of the shutter and the size and strength of the springs employed; and second, because a great increase of speed in the between lens, or front or rear lens shutter, simply means a greater proportion of the total time being spent in closing and opening the blades or working the curtain, and so a proportionate decrease in the amount of the exposure. This limit is regulated by the speed of the plate.

Therefore, for exposures which must necessarily be very quick indeed, in order to stop motion in the object, recourse is had to the focal plane shutter. This instrument, as many readers already know, is a device consisting in its simplest form of a curtain, wound on rollers at top and bottom and having a longitudinal slit in it, which passes rapidly across the face of the plate when the shutter is released. The image on the plate is exposed in successive, overlapping and continuous sections. For instance, suppose a camera four by five inches in capacity and fitted with a modern focal plane shutter. The shutter is set at its lowest tension; that is, the spring which winds up the lower roller of the curtain is as loose as it will go and still do the work. We will suppose it pulls the curtain across the plate for its full length, so that any one point on the curtain takes one-tenth of one second to go from the top of the plate to the bottom, four inches away. Now it is obvious that if there was in this curtain a slit four inches wide, and from the time the bottom of the slit first came opposite the top of the plate until the time the top of the slit passed the bottom of the plate was an interval of one-tenth of one second, the plate, as a whole, would have received an exposure of one-tenth of one second.

Now imagine the conditions exactly similar save that the slit is now two inches wide. Obviously but half the light can get into the plate from the lens as got in before. Half of one-tenth of a second is one-twentieth of a second, so each portion of the plate received but one-twentieth of a second, although the total time of the whole exposure was one-tenth of one second as before. The top half of the plate received all its exposure before the bottom half received all of its exposure; each part of the plate received half the time the first plate received, because the slit was half the size of the first slit.

Suppose a third instance, with the conditions the same, and the slit but an eighth of an inch in width. There are thirty-two eighths of an inch in four

inches. One-tenth of a second, divided into thirty-two parts, yields portions of time each one-three-hundred-and-twentieth of a second. The total time of the exposure, as before, was one-tenth of a second; that is, it took the eighth of an inch slit one-tenth of a second to drop from the top to the bottom of the plate. But each portion of the plate received but a thirty-second of that amount of time on account of the size of the slit, one-three-hundred-and-twentieth of a second. These calculations, of course, leave out of consideration the length of the curtain, which is greater in the four-inch slit than two-; greater in the two-inch slit than the eighth-of-an-inch. They are based on supposititious curtains, in which the movement is exact in the time specified.

Now, I am going to try to show you how a photograph, made of a moving object, can be distorted with this instrument and still be sharp and not blurred. Our experiment is to be made with a camera fitted with a lens of twelve inches focus. It is set up and oriented on a strip of roadway exactly one hundred feet away. On this road is traveling an automobile exactly at the rate of one hundred feet a second, which is nearly seventy miles an hour. Now, the speed of the automobile image on the plate will be to the real speed of the real automobile, as the distance of the plate from the lens is to the distance of the lens from the automobile. Referring to the dimensions above, the automobile will go one hundred times faster and be one hundred times larger in life than on the plate; in other words, the image of the automobile is one-one-hundredth of the machine in size and moves at a speed equal to the actual speed divided by one hundred. That comes down to one foot in one second, or across the five-inch plate in five-twelfths of a second.

Fig. 2

(Courtesy of Molor)

If, for the sake of clearness in fractions, we consider this plate six inches long instead of five, the image will cross from side to side in just one-half a second. In one-tenth of a second it will move one-fifth of the distance, five-sixths of an inch. Obviously, a straight exposure of one-terth of a second would produce nothing but a blurred image of the automobile, five-sixths of an inch long.

Now, let us suppose that we have a slit in our curtain one-twenty-fifth of an inch across. There are one hundred twenty-fifths of an inch in four inches, so the exposure will be one hundred times less with this little slit than with the four-inch slit. So if the slit moves in a tenth of a second, each part of the plate will receive one-one-thousandth of a second exposure. Now, the image moves from side to side of the plate, six inches in our argument, in one-half a second or five hundred one-thousands of a second ($\frac{1}{2} = 500/1000$). In one-one-thousandth of a second the image will move six inches divided by four hundred, or approximately one-eighty-third of an inch. This is a pretty small space, and would give a fairly sharp image on the plate. Now, we are ready to understand the way in which distortion occurs. It is to be remembered that the image on the plate, like that on the ground-glass, is upside down. The shutter slit normally travels from top to bottom, so that the first part of the image of the moving automobile which is taken on the plate is the bottom of the wheels. This part of the picture, like every other part, is taken in the one-thousandth part of a second. But the image is moving all the time from one side to the other of the plate; in the time it takes to take this picture remember it moves nearly an inch. So the



second portion of the plate uncovered by the slit is a little in advance of the first part. When the slits uncover the hub of the wheels they have passed beyond the point directly over the bottom of the wheels, where they should be if the picture is to be made without distortion, and by the time the slit gets to the tops of the wheels, or perhaps midway of the plate, the movement has amounted to nearly one-half an inch. The result is plainly a distorted picture in which the automobile leans forward. Every part is fairly sharp, yet the image has moved forward during the taking, and the result looks like a print from a plate in which the gelatine emulsion had slid and warped upon the glass.

In the first example of this sort of distortion shown here the automobile was going at the terrific rate of two miles a minute. It was not a hundred feet from the camera either, and it was at right angles, so, although the photographer doubtless had his shutter set at its highest tension speed, blurring of the image took place. But the lean forward is easily seen, caused in the manner indicated above.

Now, turn your attention to the second photograph. There are things to be told and things to be guessed about this photograph, but for the present and the sake of argument let us suppose it is an honest photograph, made of an automobile going at speed, but in some way leaning backwards. I did not make this picture (or the other one, either). I can't get any reply about how it was made from the man who made it; but if it is what it pretends to be, a photograph made of an automobile going fast, it was made with the camera upside down, so that the shutter slit traveled from bottom to top, and thus took a picture of the top of the machine first, and lastly the bottom, which had advanced in the meantime.

Fig 4

HIGH SPEED AHEAD (FAKE)

C. H. CLAUDY

It was labeled in *Motor*, the publication which published it, and to the courtesy of the editor of which, Mr. J. C. Chase, I owe the opportunity to reprint these pictures, "What may happen to those who speed as told by a camera."

- The photograph itself is stamped, "Photo by Geo. K. Hollister," and it came through the Florida and Nassau News Bureau, of Jacksonville, Fla. I wrote to these last-named gentlemen, asking some particulars, but have had no reply.

Now, I may be getting myself into hot water, but this photograph has so many of the earmarks of a fake that I cannot resist the conviction that the photograph was not made with the automobile moving, unless very slowly, that it was not made with a focal plane shutter at all, and that it was simply a freak picture made for purposes of sale. My reasons for this belief, which I state as a conviction and not as a fact, are these:

With relation to the ground, the top of any revolving wheel travels at its highest point twice as fast as the axle of the car and an infinity of times faster than the point on the ground, inasmuch as that point is stationary at the instant the point considered is at its lowest part of the revolution of the wheel. Consequently, the top of a wheel is always what is blurred first and most in a photograph of a vehicle in motion. Here the top of the front wheel is the sharpest thing about it and the bottom is blurred. Parts of the machine itself stand out with great clearness and sharpness; others are badly blurred. Obviously, this blurring is caused by lens manipulation—out of "focusness" in other words—and not speed, or all parts of the body would be blurred alike. The backward lean must be caused in one of three ways: Manipulation of the

camera—as the swing back and side swing—focal plane distortion, or manipulation of the negative or print mechanically, as with heat or in printing. I cannot pretend to specify which of these ways was used here, except that I am confident it is not focal plane distortion. The original picture fills to the edges an eight by ten print; this would be impossible if it were a speed picture unless the print is an enlargement from a smaller negative and the paper is some sort of developing paper, but whether bromide or gaslight I have no means of telling.

However, so convinced was I that this picture was intentionally distorted, and not distorted by reason of its speed, that I tried to see for myself what I could do in that line. The results are before you. Figs. 3, 4 and 5 are three prints from the same negative, Fig. 3 being a normal print, Figs. 4 and 5 prints made by projecting the image through a lantern and leaning the screen on which the bromide paper was tacked at various complicated angles. Of course, in my efforts the backgrounds give the whole affair away. But you will please note there is no background in Fig. 2, which is the suspected picture; it is supposedly taken on the beach in Florida, and the background of sea and sky is absent, either blocked out of the negative or out from too long development. Were my negatives so treated, or had I access to a negative of an automobile on the beach and with only sky for a background, I cannot see but what mine would be as deceptive as this one.



THE LATE DR. JOHN WATSON
(IAN MACLAREN)

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ELIAS GOLDENSKY

Small Things to Consider When Building a Skylight

By Felix Raymer

THERE are skylights and skylights, and most operators think they either have the "best ever" or the "worst ever," there being no halfway measures to any of them. The cause, or causes, for there being so great a difference in skylights is not so much in the slant of the light, nor its size and style, as it is in little things that the average photographer never thinks of. If these little things are looked to, he will, in every case, have a good light to make portraits under, and all he has to do is to know what effect of light he wants and the making of that effect is within his grasp.

One serious difficulty in getting a light that gives good, crisp results with vigor is the selection of glass to make the light of. More often than not the photographer does not know what glass is to be used, nor does he care so long as it is ground glass or clear glass or whatever kind he desires. But this is a fault that the operator, or whomsoever has the matter in charge, should overcome and be "at the putting in" of that light, for there are many kinds of ground glass as there are many kinds of clear glass. If the glass has considerable color, such as green or yellow, it should be discarded, for the colors will confuse the operator so that he does not get what he thinks he will get when his lighting is made. There is no man who can handle colors of this kind and judge the work as well as when he has an absence of color. When the light has a greenish tinge, it is a foregone conclusion that the accentuated parts of the face will not appear as they do on the ground glass. It is also true that the exposure can never be accurately judged. There are times in the day when the green cast is more pronounced than at other times, and, of course, the exposure will be variable under these conditions. The same is true of yellow tones. The light never works as rapidly as when the glass is a pure tone. This makes a vast difference in the exposing for children's pictures, and often leads the operator into trouble through having moves on the part of his subjects. Again, yellow is a bad tone for the face, and the negatives from such a light are usually of a harsh nature, yellow being a tone that retards the action of the finer qualities of light. Of course, a good operator can work the light with these tones in it and get good work from under it, but it would be so much easier to work one without them. To work a light made of green glass, or yellow either, the operator has to resort to the use of screens to overcome this tonal quality in the light. The light must be sifted to the subject through white screens, so that its tone is changed to a purer quality. This increases the exposure, and is a bother at best.

Another little thing, I prefer having my light in one end of the room, and I know I stand alone on this, for every operator will say it is better to have it in the centre of the room, so that it can be used from both ends. This is all right, I suppose, but I have never seen a man who did not use one end of the light in nearly every instance. Once in a great while he will swing the subject around and use the other end, but the doing so occurs so seldom as to be

hardly worth mentioning. I like to have about three feet between one end of the room and the light, which allows for backgrounds, and I like to have the light in the west end of the room; this may be a fad of mine, but I have reasons for the fad. As a rule, every person has two sides to his face and one side is the better looking, while the other is the side that shows the greatest markings of character. The left side is usually the best looking, and for that reason people usually prefer rather broad effects of light, or what we call plain lighting to any of the shadow effects. To get the best-looking side of the face in broad effects it is necessary that the subject be posed under the west end of the light and the camera in the east end of the light. By having the light placed in the west end of the room it saves the operator many steps to make the best-looking picture possible of his subject. But one may say, "You can do the same thing if the light is in the centre of the room." Sure, but there are so few operating rooms that are long enough, so that at best it is a waste of space, and I have found it is hardly necessary to change ends on the light except in bust work, for the full figure work makes the faces so small that any little peculiarity will hardly show in the picture. I know I am taking a stand that few take, and, in fact, I have always thought it a good idea to have the light in the centre of the room until quite recently, but after studying the matter over I have changed my mind. I do believe in changing the subject from one end of the light to the other when occasion calls for it, but that can be done any time and under any light where a bust picture is to be made.

Another little thing is the having of a light too large for the width of the operating room. No light should be longer (higher up) than half the width of the room. If it is, to get good work from it, there must be a set of curtains used, so that the top end of it can be cut off, allowing the shadow side of the face to come out in its proper weight. If the light is so high up that it extends over the subject's head, it gives toplight effects, and all operators should know what they are. As soon as one places these cut-off curtains on his light he makes his light smaller, and why not make it smaller in the beginning and save the extra cost of curtains and the trouble of using them. No light should be placed in at a lower height than the top of the subject's head and when he is seated. That is, if the subject, when seated, is about three feet high, the light should be down that close to the floor. When we make child pictures, with the tots playing about on the floor, the top of their heads will be, on an average, about three feet from the floor, so should the light be three feet from the floor. To have it lower violates one of the strongest rules of nature, and that is a violation of light. All light comes from above, and as soon as we attempt to light a subject from below we are in violation of our trained ideas of the fitness of things, and the picture becomes an abortion.

Another little thing is the surroundings of the light. If there are objects on the outside of the building that would be visible to the eye, if the light were of clear glass, rest assured they will affect the quality of the light you get. If there are trees that can be seen through the light they will cast a shade or tone over the light, and it is that much more difficult to judge of the quality of light and exposure. Often this cannot be helped, and in that case the operator

should be sympathized with, for it simply has to be put up with, and there you are.

One other little thing. I have seldom ever seen a double-slant light that did not leak. I was much amused at one of the boys to whom I had taught operating. I asked him one day, "What is the difference between a single- and double-slant light?" His answer was, "None, except that the single-slant light doesn't leak." The answer was correct. But the double-slant slight can be put in without leaking. The mistake made in nearly every case is that the contractor makes a wide lap in the glass. He will have from one to two inches lap, thinking this wide lap will prevent the leak. He is just exactly wrong, for that is what causes the leak. If the lap is very fine, hardly more than the thickness of one of the glasses, he will have no leak. The reason the wide lap leaks worse is that there is a suction formed between the glass, and the water is drawn upward and of course runs down the inside of the light, and hence the leak. The thin lap does away with this suction, and the water skips right along over the lap and no leak. Try it some time and see if it is not so.

Another little thing is the having of a wide beam between the top- and sidelight. By having the top- and sidelights divided in this manner it breaks up the highlights and gives a scattered effect to them, with the result that the retoucher has to do more work than he should. In addition to this, it divides the catchlights in the eyes, and there are two in each eye, with the result that the etcher must be brought into play to get rid of one set. The catchlight in the eye is but a small reflection of the skylight, and any obstruction in the light will show in the catchlight; therefore, the light should be free and open if possible.

Another little thing is the becoming acquainted with one's light. I have known operators who work a light for years and never know what size, slant or style it is. They need an introduction to it and to be forced to make a close acquaintance with it. When this is done the work will show it, and the better acquainted they get the better the work will be.



In and Out of the Dark Room

Second Paper

By Richard Trotter Jeffcott

SOME of you may have formed the opinion that in presenting the second division of my subject that I have been led to collect material from other dark rooms than my own. Such is not the case, and the following descriptions of how to make and use "Dark Room Appliances" are gathered from articles made and in use for years.

The ownership of a good scale means something to you, and should be an idea well worth considering. From personal experience I would suggest a Troemner Dispensing Scale, No. 6, which will be found desirable for laboratory work. My point, however, is not to call attention so much to the scale, but rather to the means of protecting it from dust and flying chemicals in the average dark room

(Fig. 10). The glass cover or protector, or rather case, measures twelve inches long, six inches wide and nine inches high. Procure five pieces of glass for your case, and bind them together with black passe-partout binding, as shown in our slide. In the making of your case you will find that if you first have at hand a "form" of the above dimensions, made either of wood or pasteboard, that your finished case will be much more rigid than if put together in sections by hand. A second application of the binding over the first will give you a good, strong protector for the scale. The bottom line of binding was later applied, to make the job more finished in outline, and has no further purpose.

Since the increased use of films, which have, in a measure, taken the place of dry plates, attention is called to one little point in connection with the drying of films. Our illustration (Fig. 11) shows a simple arrangement for squeegeeing the excess water from roll films before hanging up to dry. To Mr. James Battersly credit is due for the apparatus, which I have used for years and with great satisfaction. To my film-washing box he mounted on a strip ($1\frac{1}{2} \times 1\frac{1}{2} \times 17$ inches) two velvet squeegees eight inches wide. Careful examination of our illustration shows that the squeegees are held in position by two brass plates (one at either end). Brass springs control the opening and closing of the jaws of the squeegees, which are guided by two small wooden rollers directly back of the brass plates. A pressure on the screw eye (placed in the centre of the upper squeegee) opens the jaw, the film is slipped through, the pressure released, and a steady pull on the film removes the excess of water without the slightest injury to the film. I have found that if one is in urgent need of the film, drying is completed in about two hours under ordinary conditions. When not in use the apparatus is easily removed from the washing tank and hung up out of the way.

Many of the conveniences in my dark room are due to the inventive genius of Mr. James Battersly, and here permit me to say that the descriptions of the clock case and circular trimmer (Figs. 12 and 13), which follow, show only in a brief manner some of the articles he has made in his leisure hours.

Two clocks encased are shown. The case is made of one-half-inch poplar, ebonized, and which, when fitted with the necessary hardware, presents an ornamental dark room convenience. The clock on the left is known as a "Chrono-photometer," registering seconds, its use and application for dark room work needs more than passing mention.

Working in the subdued light of a dark room and looking at the second-hand of your watch becomes in time a hardship; perhaps C. H. Graves had that idea in mind when he placed his "Second Clock" on the market, and I can heartily agree with him; for the timing of bromide enlargements, Velox prints and lantern slides our "Second Clock" is a convenience worth many times its price. The other, an ordinary Seth Thomas Clock, will tell you how long since you left that Velox print in the hypo bath or at what moment you placed that plate in your tank developer, provided, of course, you made note of the original placement. Together they make a handy combination, encased from dust and dirt, and readily hung or placed to suit your convenience.

**THE
CAMERA**

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But little attention has been given to making circular "forms" or masks. Daily some one finds a need for either or both. They are not manufactured to any extent, and then only in limited sizes—probably not just what you desire. The idea here presented gives you at once a thorough understanding of the little article and its capabilities. This instrument can be procured from the maker in various sizes, but the one before you will cut circles up to five inches in diameter. A circular brass frame, into which three pins are riveted (for holding the paper or print against slipping) forms the base. The brass arms extending to the centre post are securely fastened to both base and post. From a rod running through the centre of the post a graduated scale is furnished (determining the size circle to be cut). The ordinary trimmer wheel is fastened to the slotted guide, and when the position for the knife is found it can be readily locked in place. A turn of the handle completes the operation, giving a clear-cut opening of any size desired. It is perhaps wise to mention here that the cutting of masks or prints should be done on sheet zinc. Since the introduction of the postal picture card a demand for a series of circular "cut-outs" has been created; many a print which cannot be trimmed oval or square is generally well balanced in a circular mask.

In the 1907 *American Annual* a little article from my pen described in outline the descriptive matter for the next illustration (Fig. 14). It perhaps may not be out of place to go into the matter a little more thoroughly. I would recommend that you do not buy absorbent cotton for your work in larger than one-quarter pound packages. It can be more readily handled and cut to an advantage than any other size. Did you ever have need of a tuft of cotton at a critical moment and find it in the original roll high up on a shelf? Perhaps so, and to add to your troubles your hands were wet. Try this scheme and probably you will agree with me that it is a "good thing." Procure a box (wooden preferred) for the purpose; keep it in a handy place for use. Now take your package of cotton and cut it into squares of about one and one-half or two inches. Toss them into your box, and when you need them they are ready.

Perhaps it may occur to you that this and the succeeding pictures treat of insignificant items, yet they are part and parcel of the whole operation that tends to successful photography. Do not think that the picture is complete when the exposure is made. The composition and exposure may be correct in every particular, but the real work is done in the dark room, and in asking your attention to the "little" portions of my talk they are to the end that success may be yours, provided care and thought are used in finishing.

A piece of thin poplar, made paddle shaped, and measuring about one and one-half inches wide and fourteen inches long, having a circular opening in the handle to hang up by, will be found a useful adjunct in your Velox work (Fig. 15). You can turn over that print and examine it from time to time without permitting the fixing bath to soil your hands. It is a good idea, and saves you lots of time that would be spent in hand washing after you go over each print in the fixing bath.

Perhaps you have thought that any "old thing" will do for a stirring rod. At one time I may have agreed with you. Some years ago I formed the opinion that "Scotch Thistle Glass," such as is used in connection with boiler indicators, would make a good stirring rod, and after several years' practical test I have found my opinion verified. Procure pieces twelve to fourteen inches long and from five-sixteenths to one-half inch outside diameter. Have one end rounded off. Now you have a hollow tube of immense strength with one end closed, and yet so light and useful that any photographic chemical can be readily crushed without fear of glass splinters. These rods are not made for photographic purposes, but if desired I will be pleased to procure them for you. From experience I have found that glass blowers generally know little of working this grade of glass.

Perhaps, as I mentioned before, it is the "little things" that are so needful in dark room work. When I say "dark room work" I am referring to the whole process of finishing, even to the spotting and retouching of prints and negatives. The slide before us has reference to the last touches to be made to print or negative. I have called this feature a "Handy holder" (Fig. 16). Take a piece of dry lumber and bore, at regular intervals, a series of circular openings a trifle larger than the glass tubes they are to hold. The glass tubes shown are the same that makers of developers use to market their goods; soak off the label and clean the tube thoroughly, place it in the opening, as shown, and you have a handy place for your mask and cutting knives, retouching pencils and spotting brushes. Keep a separate tube for that little article known as "Eraso." Probably at some time you have wished to lighten a shadow or remove some little portion from that platinum print. "Eraso" will do it, and if you use care no blemishes or marks will result.

"Double mounting," known in connection with platinum prints, is an easy method of bringing out the "best" in your print by using mounting boards and papers that will readily harmonize with your print. Usually glue is obtained for mounting the boards and papers. For spreading the glue evenly I have found a little article, known as "Tixit Spreader," a good thing for this purpose. The article which is favorably known is shown on the right in our slide.

The use of the narrow white border around your print adds much to its appearance, and in the finishing of Velox prints for commercial purposes I have found it takes well.

However, to secure the best results some little time must be spent in the preparation of masks beforehand. Use black needle paper for the purpose. Cut your paper into sheets 5x7 for all sizes up to and including $4\frac{1}{4}$ to $6\frac{1}{2}$. Now, with T-square and angle, draw on your needle paper lines indicating the size desired, taking into consideration that you will have to allow one-eighth inch on each side smaller than the indicated size of your negative. Take your kodak catalogue and you will note that ten films under 5x7 inch size are made; you will then need that many different size masks if you cater for such finishing. Our slide (Fig. 17) presents two diagrams. We are referring at present to the left-hand side. We will, for example, suppose we are making a mask for a

3a negative. Making due allowance, as we have mentioned, we draw our outline, permitting our lines to cross, as shown. Our "form" is now placed on a sheet of zinc, and with the mask-cutting knife and straight edge we follow the lines as drawn. Naturally, as we have cut past the corners, the centre piece will drop out, giving us absolutely square corners. Now, let us refer to the diagram on the right, and we show where the centre has been removed. Take four small pieces of gummed lantern slide binding and place a strip across each corner, as shown, care being used to bring each corner into the correct position. Our mask is now complete, except for the mounting (on one end only) to 5x7 sheets of glass previously procured for the purpose. When not in use these masks can be stored away in a dustproof box.

Our last slide in this section is before us, and its application can be readily understood. A piece of heavy celluloid, ruled with lines about one-eighth of an inch apart, known as a "trimmer guide," is fastened permanently on a trimmer. If you procure one large size you will find it useful for several purposes. After our prints have dried and it is desired to trim them (showing the white margins), any amount of white border will show, as per the lines indicated on your guide (Fig. 18). Again the "trimmer guide" will be found useful in double mounting. Cut your sheets of light board or paper slightly larger than desired, having your print mounted on the first paper—you can readily indicate the size margin desired—and then by cutting the succeeding sheets larger in series, procure your double mounting effect without effort. At this point of the lecture a practical demonstration of each of the following was shown: Trimmer for margins, using a mask knife, using "Eraso" and stirring rods, and using "Tixit" for double mounting.

A finished passe-partout was shown, and then one was made showing some new ideas and introducing a new passe-partout guide made by Mr. Jeffcott.

The third and last paper will treat on various subjects pertaining to photographic methods and means, and will describe in an easy manner considerable new matter.

[As mentioned last month, Mr. Jeffcott will be pleased to answer questions on photography to the best of his ability, and he may be addressed care of John Haworth Co., 641 Arch street, Philadelphia.—ED THE CAMERA.]

Getting Your Best Efforts the Attention they Merit

By David Gray Archibald

SIZE can hardly be said to have anything to do with the merit or the beauty of a picture. It may be a beautiful picture, be it ever so large or so small. Many of the world's most prized paintings are very small. But if one wishes to have his best efforts, pictorially, given the attention that he thinks they merit, he had better make them of goodly dimensions. This is a simple matter if one has a collection of different foci lenses and knows just what he wants to take, thereby being able to include it in the view. To all such as have the lenses and the knowledge of that which they want exactly I have nothing especially interesting to say, save to sincerely congratulate them upon the possession of a highly desirable but rather rare combination of equipment and artistic perception. To all those who have not the foregoing qualifications and equipment but often see possibilities in their plates when taken (sometimes these are reached by careful trimming), which possibilities result in prints that are too small to attract the attention desired, I have a word to pass along.

First, find out by any way within your reach the good part of your negative and carefully note it. Then enlarge this part to the size you have decided to show it in. This may be either enlargement direct or enlarged negative. This means a little work before you get your plate to print from, but the result of having a print just what you desire it should be, from an artistic stand-point, and, at the same time of goodly size, will amply repay you for all the trouble you have taken. Along the way you can eliminate blemishes and otherwise greatly improve your work.

If you work as above you are assured of control over your photographs in every possible way, and can confine it to the very best. The merely ephemeral work that is more a record of some fact than anything else does not come under this heading.



Getting Dollars

By Milton Waide

THE ethics of our profession is the "getting of dollars." Regardless of all our talk about high-art and constant endeavor to put ourselves on a plane with the painter and sculptor, our one ambition is to get dollars. There are just six suggestions in that line which I shall make, having found them profitable during my twenty-five years' career in photography.

First. I would advise that the photographers of a town get together, organize, fraternize and surprise themselves at the wonderful advantage to be

derived from a handshake and a cigar. I speak from experience, for here in the East our meetings have wiped out any chance of jealousy or envy and has made of us dear friends, each with the other, and good words for our competitor have taken the place of the antagonisms of the past. Get together, organize, stop fighting, protect your mutual interests, and you will all get dollars thereby.

Second. Have a hobby to ride. Novelty is a sweet morsel to the public. I do not care what it is, have something "different" to exploit. Every business realizes the necessity of the element of novelty in a successful career.

Third. Know that your show-case is one of the best dollar-getting schemes you can find. Cleanliness and frequent change, lack of overcrowding, as well as the quality of its contents, are each a factor in the financial success of your business. It is better to change your case every week and place therein three or four ideal samples of your skill than to fill the case to overflowing once in six months. Try the following plan as an advertisement and a money-bringer: On a card print these words: "Every Saturday morning this case will contain a new portrait of some well-known citizen." Now, in the frame put, every Saturday morning regularly, a picture as promised. You will find that people will walk out of their way to see who is represented that particular week in your case, and by invitation you can create prominence in your community which will be appreciated and sought for. This can be continued for six months, and I have found it profitable in every locality where tried.

Fourth. One way to get dollars is by avoiding re-sittings. I have found that this can be done by carefully selecting the best negatives made of a patron, having them carefully retouched, etched and improved, and in as perfect condition as though they were ordered from, before proofs are sent out. I have found that by so doing re-sittings can be almost entirely eliminated.

Fifth. Make at least one large plate of every sitter. If it turns out satisfactorily, retouch it and send with the other proofs a proof of this negative. Do not try this for one month, three months or six months only, but for one year, and I will guarantee that if you do your income will be increased at least 15 per cent. by this speculative plan. There will be those who doubt this, but I have tried it in various communities and never have found it to be unprofitable. Much will depend upon how you manage and the price quoted in following out my suggestion, but it *will prove profitable*.

Sixth. Make of your patron a solicitor. Courteous treatment, pleasant manner, an extra attention or two, with a gift of an extra print mounted differently than the others (I do not mean promising it in advance), with a request for co-operation, should invariably bring you, during the year, at least three friends of the customer. If each of these is likewise treated, you will ere long on the "endless chain" plan have all the business you can handle. These few suggestions are positively dollar getting. I have tried them and found them efficient. The efficiency with *me* lies in lack of ability to *save* the dollars which have been gotten. I have no *ability* to suggest or teach how to *save* them; that is up to you.



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AUGUST, 1907

We cannot, at this time, speak in anticipation of our annual visit to the National Convention at Dayton, O., August 6th to 9th; but the foregone conclusion is that we are going to learn something from the other fellow and profit by it.

Men who are successful in photography, and those who are the leaders in the profession, will be in attendance, and their service and information will be of help to you.

The officers of the Photographers' Association of America deserve more than the vote of thanks extended for their unselfish labors. What should be done is that every photographer in the Americas should be a member of the association. We cannot urge this too strongly. The "penny-wise" man is the greatest loser by his non-attendance.

✽

This month we have the pleasure of announcing the new weekly magazine, the *Bulletin of Photography*. Overtures have repeatedly been made to the editor of THE CAMERA to turn it into a weekly, but as the interests of all concerned can best be served by publishing another magazine, the *Bulletin of Photography* makes its initial bow. THE CAMERA will be published as hereto-

fore as a monthly, and even a higher standard will be reached in the future. Whilst the editor will be connected with both magazines, neither one will suffer by his assuming double duty, nor will the policy of one magazine interfere with that of the other.

Photographic interests in America have not been catered to for many years by having an active and up-to-date weekly, and the new magazine starts out with the right men at the helm and should prove the desideratum. EDITOR OF THE CAMERA.

✽

One would rather believe with Locke that "all our knowledge is derived from experience" than to take comfort in the old adage, "Experience is a dear school, but fools will learn in no other." The price of tuition, it is true, is sometimes rather high, but one may be assured that the measure of one's progress is in the ratio of the wisdom gained by failures. I remember my first experience with development. I shall not inflict upon you the story of my grief, but simply say I tried all developers, condemning each one in turn. At the conclusion of my seance a host of wan, pale-faced ghosts seemed "to plead, trumpet-tongued, against the deep damnation of their taking off," and when I left that dark chamber I saw written (in my mind's eye) over that door the depressing words of Dante, "All hope abandon ye who enter here." I do not blame the developers now when I go astray. I blame myself. Nay, like the clown in "Twelfth Night," "I am for all waters." I get the best results by the method employed, not depending on any particular agent to work out the plate's salvation.

One thing experience has taught, and the lesson is worth a good deal: that is, study your exposure before you apply the developer. Know what you want to secure in your negative—softness, vigor, detail, contrast, etc.—and apply your experience in a methodical, judicial manner.

✽

The usual dark room is delightfully cold in winter and hotter than 100° in summer, hence you need a plate without the usual summer difficulties—non-frilling and orthochromatic. Did you ever try the Orthonon? It's your loss if you haven't.

To obviate the inartistic results of perfect definition some photographers go so far as to suggest the desirability of a lens giving diffusion of focus. Indeed, Claudet constructed such a lens, and I believe Dalmeyer recently introduced such an optical freak. But these artists, forgetting certain laws of optics, fail to observe that it is impossible to represent the whole of the object in the same degree of "out of focus." If, for instance, in a head, the nose should be a little out, the eyes would be considerably more so and the ears still more. In fact, some parts of the figure would be quite indistinct and confused, whilst one portion only would be a little softened down by the minimum amount of deviation from sharpness of definition.

By the laws which regulate the action of lenses of the general pattern it happens that there is strictly only one plane in focus. The image of that plane is therefore not in harmony with the images of the other planes. Doubtless, artistically considered, there are times when the picture is more effective when the planes are equalized, and in general practice the photographer attempts, in the delineation of the human face, to strike an average focus.

Perfection would be obtained were it possible to first take the plane of the nose, then the plane of the eyes, and finally the focus of the ears and make a collective image of the portrait. The difficulty with such a composite picture would lie in the varying sizes of the outlines of the different foci and in keeping the same pose. Still it is a wonder that some of the three color printers do not attempt such a stunt.

Amongst professionals, if we may be allowed to express our opinion on professional portraiture, we have noticed a tendency to too strong light. While subjects of a certain character are often effectively presented by vigor of illumination, we feel that in general, exaggerated lighting of the head is detrimental to artistic effect. We feel that a softer treatment of the head is better than that of extreme roundness and force.

Strong lighting for strong heads; but ordinarily one comes nearer the illusion of life, the effect of nature as you see it in the street, the drawing room or wherever you meet people where the light is softer and more diffuse than in the photographic

studio. Frequently have we seen perfect illumination with a delicious softness which moulded the features to a perfect harmony. Where? In a street car; and we have wished for some instrument with which to secure the fine effect.

Now there is no reason why softer illumination should not be practiced in our studios. We would not, of course, advocate a degeneration to the mushiness of the impressionist, but there is a golden mean, and it would not hurt the artistic effect to soften down objectionable detail in drapery and flesh.

✽

The Unexpected Discovery Made by a Snapshot

Snapshot photographs are constantly adding valuable facts to the stores of science. They are able to detect and analyze motions too quick for the eye to follow. A recent instance of the application of photography to a disputed question in natural history, says the *Philadelphia Record*, is an experiment made on a vessel from British Columbia to San Francisco, one of the passengers thereon being a scientist in the employ of the U. S. Government.

A large albatross had been following the steamer and keeping pace with it for several hours, and the wonder grew among the watchers on shipboard as to how the bird was able to fly so swiftly while apparently keeping its wings extended without flapping them. As this is a common manner of flight with the albatross, the explanation has been offered that the bird takes advantage of slight winds and air currents, and so is able to glide upon what might be called atmospheric slopes.

As the albatross sailed alongside of the ship, about fifteen feet away, the scientist snapped his Graflex camera at it and obtained a photograph which astonished him and his fellow passengers.

The photograph revealed what no eye had caught, the wings of the albatross, each some five feet long, raised high above its back in the act of making a downward stroke. The explanation naturally suggested is that more or less frequently the bird must have made a stroke of this kind with its wings, although the eye could not detect the motion, and that the camera chanced to be snapped just at the right moment.

All questions relating to technical matters, processes, working instructions, etc., are referred to competent experts in the particular subject referred to, and the utmost is done to insure reliable and practical answers being given.

Correspondents are requested to first state their case and then number each question; they should also write on one side only of the paper, and enclose correct name and address—not necessarily for publication. No attention will be paid to anonymous communications or those only signed with initials.

We do our best in all cases to publish the replies in our next issue following the receipt of the inquiry, but cannot absolutely guarantee this.

All inquiries should be addressed to THE CAMERA, 606-608 Sanson Street, Philadelphia.

No questions answered by post. No prints criticised.

TONING.—In preparing gold baths for toning silver prints, what is, approximately, the number of 4x5 prints to allow for each grain of gold; also the number of same size prints that are absolutely fixed by each one ounce of hypo used? In "fixing" gaslight papers, is the same amount of hypo a safe margin to allow?—N. R. E.

One grain of gold is supposed to tone about fifty 4x5 prints. Hypo is so cheap that we have never considered this, and we cannot answer. Gaslight papers require a stronger fixing bath than that used for silver prints.

FADED PRINT.—I have an old, faded albumen print which I wish to copy, but would like to intensify same before doing so. It refuses to bleach in mercuric chloride after three days' soaking. What can be done to strengthen the print, as it is too weak to copy at present? G. R. T.

If the image refuses to bleach it consists practically of sulphide of silver. The thing to do is to leave the image as it is, and, assuming that it has a pale yellow color, to make it black by the use of a blue or violet screen between lens and plate or lens and print. A piece of cobalt blue may be used, or a lantern or ordinary plate fixed, washed and dried, and then stained with methyl violet, may be used. The deeper the violet stain the blacker the faint yellow image of the print will appear, and if a slow plate is used for copying quite a good negative may be obtained.

TANK DEVELOPERS.—You have given several formulæ for tank developers, but none for metol-hydrochinone. Will you please oblige?—C. F. S.

The following is from the new Seed Dry Plate Company's new booklet, and the additional formulæ are given, as they may be of interest and give different intensities:

METOL-HYDRO.

NO. 1.

A.

Water 8 oz.
Metol 25 gr.
Hydro 35 gr.
Seed Sulphite 100 gr.

B.

Water 8 oz.
Seed Carbonate of Soda 100 gr.
Use of A 2 oz., of B ½ oz.; water 12 oz.

ORTOL.

NO. 2.

A.

Water 6 oz.
Pot. Meta Bi-sulphite 23 gr.
Ortol 65 gr.

B.

Water 6 oz.
Seed Sulphite of Soda 100 gr.
Seed Carbonate of Soda 100 gr.
Use of A 1 oz., of B 1 oz., water 20 oz.

GLYCIN.

NO. 3.

A.

Water (hot) 4 oz.
Seed Sulphite Soda 55 gr.
Glycin 45 gr.

B.

Water 6 oz.
Potassium Carbonate 96 gr.
Use of A 2 oz., of B 3 oz.; water 60 oz.

Time of development 20 minutes Temperature 70 degrees Fahr. We would also remark that these three formulæ give three degrees of intensity, No. 1 being soft, No. 2 medium and No. 3 strongest.

EDITOR OF THE CAMERA.

Dear Sir:—Will you kindly ask such of your readers as are former residents of Buffalo, N. Y., to send their addresses to the Old Home Week Committee in order to receive souvenir invitations to Old Home Week in Buffalo, which will be from September 1st to the 7th inclusive? By doing so you will greatly oblige the committee.

Yours sincerely,

JAMES W. GREENE,
Chairman Publicity Committee

You do not know how good a Wollensak lens is until you go into the merits of it. The makers have prepared an interesting catalogue, that will tell you a lot about the lens. A copy can be had free by asking the Wollensak Optical Company, 286 Central avenue, Rochester, N. Y., to send you one.

✽

Those who have asked us for the information regarding the factorial and tank system of development should ask their dealer for a copy of the new Seed booklet entitled "Seed—from which good pictures grow." Our copy is fastened with a chain, but you can have a loose one from your dealer or from the M. A. Seed Dry Plate Company, Woodlawn, St. Louis, Mo.

✽

While I do not believe that the combined toning and fixing bath is in itself responsible for the fading of prints, I do think that the improper compounding of the same is a fruitful source of the dingy appearance some prints take on in less than six months after they are finished, and I also believe that the fading is due often to insufficient action of the hypo.

The solution of hypo in connection with the toning solution is too weak, and it is hardly fair to expect the sulpho cyanide to do the work, and long life can hardly be predicted of the prints.

There is a desire for fancy tones from Bartolozzi red to purple, and the amateur is so anxious when he sees the much coveted tone that he never thinks of the necessity of thorough action on the silver, but lifts out the treasure to find it after awhile in the sere and yellow leaf condition, and of course he condemns combined baths, if the paper itself escapes anathemas.

Prints ought to be well fixed if one desires them to last a reasonable time. It is not necessary to have a strong hypo solution, rather to the contrary; but it is essential to have a good quantity of it, and its temperature ought also to be considered.

If you want to know about a camera, or a lens, or a shutter, you want a catalogue describing these three interesting things in photography, and the new Korona booklet of the Gundlach-Manhattan Optical Company, Rochester, N. Y., will give you the information. By making a request one will be sent you free.

✽

To get good results in photography the whole secret is in the lens. We do not pretend to say which is the best, nor do we know, but we do know that the new lens catalogue of the Bausch & Lomb Optical Company, Rochester, N. Y., tells about all one needs to know. A copy is yours if you will only send word on a postal that you want one.

✽

Last month we referred to the highest stack in America, at Kodak Park, and during a recent visit to Rochester a yachting friend stated that he could see the stack when twenty-five miles out on the lake, and it was visible long before the lighthouse could be seen at the mouth of the Genessee river. According to this, the stack is like the Kodak goods—never out of sight.

✽

Some time ago a German scientist wrote an essay on photographing a wink, and, of course, went into a long preamble and told how quick one really squinted, but did you ever consider the speed of a focal-plane shutter and realize how slow a wink is in comparison? Did you ever think that you would like a Graflex, using films and a focal-plane shutter? The new 3A Graflex uses 3A Kodak N-C Films and has the right focal-plane shutter with it. As soon as we saw one we bought it, and we want to spread our enthusiasm. Ask your dealer to show one to you or bother the Folmer & Schwing Company, 12 East Caledonia street, Rochester, for a descriptive catalogue. The new 3A Graflex will be a revelation to you.

Modern inventions have done much for us, and they come so often that one doesn't look for a novelty as of yore. We've so many "graphs" that it is a difficult matter to keep track of them, but the \$10 Premograph is the greatest value ever offered at this low price. You know the picture can be seen on the ground glass right up to the moment of "taking"; in other words, you get a reflex camera at about one-third of its real value. Most of the dealers have them in stock, or a catalogue will be sent from the Rochester Optical Company, 501 South street, Rochester, N. Y.

✽

Time in a man's business is the greatest factor, and in photography, as we all know, it is paramount. If you haven't the right plate of the correct speed, then you lose. The Hammer Blue Label helps on that end. If the shutter is slow, then the golden moment is lost, but the losses are small if such a shutter as the Goerz XL Sector be used. Finally, the lens question comes up. There's the new Carl Zeiss Tessar working at f 3.5, or you can have the Cooke, with its many advantages, or else the new Crown, made by the Crown Optical Company, 486 South Clinton street, Rochester, N. Y. We do not make comparisons of lenses, nor do we say which one to buy, but we do say that we have all of the best makers advertising with us. Every advertiser in THE CAMERA has a catalogue or descriptive matter ready for you if you'll only ask for it.

✽

That examination of a plate during development can have absolutely no effect upon its good qualities is a fact which probably will not be denied by any one. Even if one adopts the factorial development system as devised by Mr. Watkins it is applicable obviously only to those plates which are not panchromatic. The time development system, that is, development with a solution of constant composition at a constant temperature for a given time, completely solves the difficulty, provided, as some one has said, you have somebody to call out the time or a recording clock. When one is forced to use a watch, however, there should not be the slightest difficulty in temporarily covering the dish up to see the watch face, and one may use for this a

light-tight box, or, obviously, if one works some distance from the light, a sheet of stained glass of a color complementary to that of the dark-room light will at once produce practical if not theoretical darkness over the plate.—*The British Journal of Photography*.

✽

The publication of *The Year-Book of Photography* about this time every year marks the commencement of the photographer's real summer. This annual—now in its forty-eighth year—has just been issued, and every photographer who wants a complete work of current reference will be the loser if he fails to get a copy. Among the attractions of *The Year-Book of Photography, 1907-8*, is a very complete series of articles on photographic subjects that usually call for attention at the amateur's hands. The editor (F. J. Mortimer, F.R.P.S.) has gotten together a most complete résumé of the year's work, and a Review of Photography for the past twelve months is a new feature. The section of the Year-Book devoted to photographic formulæ and data has been revised and brought up to date. The 600 pages of the Year-Book are crammed full of good things for the photographer, and our readers will do well to secure a copy without delay. The price is 50 cents, in paper covers. G. Genert, agent, 24 East Thirteenth street, New York.

✽

The Mirmont Photo Paper Company, Department D, of Glendale, Brooklyn, are making a unique and interesting experiment in marketing their well-known "New York" papers. They have secured a lease of the ground floor store at 18 East Twenty-third street, New York, where they will carry a \$15,000 stock of photographic papers for the convenience of their customers in Greater New York. To the best of our knowledge this will be the only retail store in the world devoted exclusively to the sale of photographic papers.

The store will be under the management of O. H. Hart, the secretary of the company, assisted by a force of demonstrators, including Sam Oswald, George Barrows and Bill Nye, who will demonstrate the papers to the studio trade and conduct continuous demonstrations at headquarters.

We understand that before the end of the year the Mirmont Photo Company will open similar stores in Chicago, Philadelphia and St. Louis. To meet the increasing demand for their goods and to be ready for any emergency the company have started to duplicate their entire factory outfit; this was begun on June 18, just one year after we had announced in these columns that they would rebuild their plant, which had just been completed only to be destroyed by the San Francisco disaster. Truly a double-headed Phoenix.

✽

Mr. Richard Hines, Jr., writing in the *Mobile Register*, culled the following paragraph from our June issue, and as Mr. Hines' remarks are so interesting we publish both articles herewith:

In the department of "New Things in Photography" in *THE CAMERA* for June we find this paragraph: "A contemporary magazine advises one of its readers as follows: 'Almost any developer you are accustomed to use will do for tank development. The only one which is really unsuitable is pyro. We would advise you to use —, etc.' It is rather strange that pyro should be condemned, and yet, only the other day we wasted (?) over four ounces of dry Afga pyro in developing a lot of films and plates in tank development. In spite of the advice given we got only negatives that were as perfect as they could be. Was our kodak developing tank hypnotized? We were after results and got them, and got the results without much labor. Isn't it funny how many 'sot in their ways' ideas some people have? Our new developing room has only three big windows and a door in it, and nothing to shield it from the glorious daylight, yet we developed plates, films and developing papers and got what we were after. There is a heap to learn in photography—we only know an atom—but we know enough to advocate tank development, and are not ashamed of poor old pyro. We use the Eastman formula—but did you ever try it?"

This paragraph gives us an excuse for "saying something" this week on the subject of pyro and the Eastman tank formula in particular. During an experience of ten years in photography pyro has been the

favorite developer, and up to this good time has always filled the bill. So much has been written about its value and the great advantage to the printing quality of the negative, the yellow stain gives, that it would be a waste of words to enter into any laudatory remarks on the subject of pyro in general as a developer. What we wish to speak of in particular with regard to pyro development is the value of the Eastman tank pyro powders for tray development. It occasionally happens that you have one or two exposures and do not desire to make up a whole tank full of developer for their development. Such was the condition that confronted the writer only recently. My laziness—not wanting to take the time to compound a pyro developer—led me to get out one of the Eastman pyro powders, dilute it with the requisite thirty-two ounces of water and use that in developing my negatives. I had been making some exposures in portraiture—genre work, and wanted to secure a soft negative, full of delicate gradations. The exposures had been full—the plates would have shown over-exposure in a normal developer. They were put in a tray and flooded with this diluted pyro tank developer and left to work out their own salvation for the required length of time, and the result was a couple of the most exquisite negatives I have ever made. The plate used was a Standard Orthonon. I was simply amazed at the color values which the plate gave in those negatives. The subject was a young woman with golden brown hair, wearing a matinee of white lawn trimmed with lace and holding a bunch of Easter lilies, posed against a medium blue background. On an ordinary plate such a subject would have presented untold difficulties if the operator had been working for anything like decent color values—for they would have been well nigh impossible. With the color value plate, however, the result was all that could be asked. I think any one having just a few plates to develop, the exposures of which are uncertain, will find the diluted Eastman pyro powders the developer par excellence for such work. I have proved this to be the fact to my own entire satisfaction, and I have found it especially valuable in the development of negatives of flowers.

EDITOR OF THE CAMERA.

Dear Sir.—As a subscriber to THE CAMERA, have been very much interested in Mr. Claudy's articles on the use of the focal plane shutter. As I have been using a focal plane shutter for the past year, and without very successful results, desire to ask you for a little enlightenment. Am using a new model, 4x5 Reflex Camera, fitted with an f. 6-5. Cooke lens of 7½ in. focus. It seems almost impossible for me to take a "snapshot" with this camera and secure sufficient exposure.

During the present month have taken a number of pictures of children on Cramer Crown plates, with opening in lens of f. 8 and f. 6-5, with opening in shutter of two inches and tension of shutter at "O." According to the speed card furnished this would give an exposure of 1-12 of a second, and yet pictures taken in bright sunlight have been so underexposed as to be practically of no value. After the many failures which I have experienced I wonder how it is possible for Mr. Claudy and other workers to secure such good pictures with exposure of 1-300 of a second and over. Have experienced same difficulty as noted above with Goerz-Anschutz camera.

F. C. R.

MR. CLAUDY'S REPLY.

Dear Mr. R.—Your letter to THE CAMERA is sent to me for reply. Either your camera has an abnormally high tension at the lowest marking or the mirror interferes with the action of the lens, thus reducing the time of exposure, or your system of development is all wrong, or you have taken only pictures with abnormal amounts of sunlight and shade, unusual contrasts. I confess none of these explanations appeal to me particularly, except the development theory, and not knowing you or your work or your experience, I have no right to say you don't do that part correctly. But I suggest that you make similar exposures to what you have been doing, using

a Hammer Blue Label Plate, and develop in the following, using, *in a tank*, water, 48 ounces; soda sulphite, 90 grains; soda carbonate, 60 grains; pyro, 30 grains, at 65 degrees Fahr., for exactly thirty minutes. If you still get negatives which show underexposure, the trouble is in your particular instrument.

Finding that that is so, try it on a shutter tester for speed, and then send back to the manufacturers, with sample failures, to show trouble. I have used four different focal plane shutters and never have any such trouble. I make twelfth of a second exposures *in the house* and get fully-timed negatives.

But you can't use a two to four hundredth out doors, even if there is too much contrast, as a white dress against a green tree, and get a nicely graded negative.

The fact that you had the same trouble with a Goerz-Anschutz camera seems additional evidence that it may be improper development. Pray, pardon me, and remember that my only desire is to help you, but are you quite sure you know the difference between a moderately timed and badly underdeveloped negative, and one merely underexposed? Many people do not, and lay to one thing trouble caused by another.

One of the great possibilities may be with your lens. Are you sure that was clean? This is just as important as developing a plate; in fact, more so. You know that dirt and photography do not go to the same wedding.

I shall be glad to have you write me, and assure you I will be pleased to help you with any small knowledge I possess.

Faithfully yours,

C. H. CLAUDY.

EDITOR OF THE CAMERA

Dear Sir —I am not a crack photographer yet, but, like the Frenchman, I am "developing," with the accent on the o.

How did I get the fever? It was a case of contagion pure and simple. An itinerant photographer pitched his tent next door to me. He was sociable and so was I. I didn't then know the difference between hypo and chromatic aberration. It was all Greek to me, but as I am one of those fellows that don't tell everything they don't know, the "photog" didn't realize at first

that I was so cussedly ignorant. He used to occasionally show me a picture he was printing in the sun and would ask my advice as to its being "deep enough printed." I invariably said yes. Later, he showed me some plates he had been going over with a pencil. That aroused my curiosity and I asked him what he did that for. The question gave me away and he shut up like a clam. (His wife said Fred had spent \$200 in learning the business and he didn't think it right to give his knowledge away gratis!)

As the professional took fright I took the contagion. I kept pumping questions at him like a man-of-war gunner plugs a floating target. He answered me in technical language which, while it took away my breath, whetted my curiosity to know more. One day he showed me a box camera—one of those little dollar-and-a-half affairs—with a shutter that buzzed eloquently every time you touched a button. "What do you want for it?" I asked. "What'll you give?" Yankee-like he answered. I didn't know the value of the box, but I was desperately determined to have it. I was possessed of a handsome take-down rifle, worth a half-dozen box cameras like the one referred to. I offered that, and the way that "profesh" snapped at the offer would have made me sidestep if I hadn't been so far gone with the contagion.

When I secured possession I made that photographer tell me how I should go about to use it. Its stop was F16, and he told me I would likely have more success outdoors than by using it in the house. But with possession of the wonderful machine came the resolve to do the hardest thing first. And right here I think it wise policy for the amateur to start taking time pictures indoors. He will have many failures, but when he becomes accomplished, outdoor photography is dead easy.

My first picture came up on the plate, and, although it would have been anything but a prize winner, I must confess it gave me one of the profoundest delights of my life.

My second plate was a dead failure. But having gotten the latent image once I went to work again. My third attempt was more successful, and it was not long before I felt that I knew something about photographing. After getting time-work down pretty thoroughly I tried outdoors, and, although I found out the method of overexposing a plate with but little effort, I soon "caught on." I discovered that there was a whole lot to learn, and, stepping into a department store one day, I saw a book

advertised as "The Right Road to Photography." This I purchased and read straight through, I believe, three times. This book told me a lot, but I was confused as to what I read of planes, astigmatism, distortion, etc. I saw my need of knowing something about the eye of the camera.

By this time I had outgrown my box camera and gotten a better one, a 5x7, with a symmetrical lens. I sent to New York and got a book on lenses, and it was a good one, being free from technical words and written for the man in a hurry to know something. This is something else I should advise the amateur photographer to acquire, a knowledge of light and how it acts through the lens. In fact, you cannot get very far in photography without such knowledge.

My desire to know more has grown every day since I first started out. I wanted to know something about portraiture, and I found that for 10 cents I could get that information. One day I saw a magazine lying under a glass case in the camera department of a store, and when the salesman asked me what I wanted, I said "I want a ten-cent 'CAMERA.'" He thought I was joking at first, and then he "caught on." That was my first introduction to the "CAMERA," and I found that it was well worth the price. In between its covers I found a mine of photographic knowledge. I think I have gained more real practical knowledge from the articles written by Felix Raymer and C. H. Claudy than from any other source. No amateur can afford to neglect reading a good photographic journal like the CAMERA regularly. Success in photography consists very largely in keeping up to date.

I have made some good pictures and some bad ones, but I would advise all amateurs to cultivate that quality of "feeling" the light rather than using the exposure meters on the market. It will pay in the end to acquire this talent, even at the expense of many plates. I should further advise the amateur to acquire a knowledge of the chemicals required for developing. When you can make your own developer you are "developing" yourself! Learn to find out when a plate or film is properly developed. Don't get scared either photographing or developing. Take time. Furthermore, give your plate time to thoroughly fix and then be sure to wash it clean of the fixer. Above all things, keep your trays clean. By attending carefully to details, and keeping your eyes constantly on the alert for knowledge, you will grow to become a real photographer in deed and in truth.

S. W. WHEELER.

To Pyro

Of all the chemic mixtures known
To expert or to tyro,
To thee I'm true, you are my own,
My one and only Pyro.
Pure as the frost-flakes crystalline,
White as the driven snow;
In spite of all your rivals keen,
I fonder of you grow.

Let those who will woo Rodinal
(She's much too soft for me),
Let others rave of Amidol
(She's simple, I'll agree).
Some bask in Quinol's charms, and some
Eikonogen desire, O;
But I am always sad and glum
Without my sweetheart, Pyro.

When first we met, long years ago
(So long it makes me shudder),
I thought my lady somewhat slow
(Ere yet I understood her).
But now I know her little ways,
I more and more admire, O,
And loud and long will sing the praise
Of my own faithful Pyro.—*Focus*.

✽

In an investigation as to the nature of the latent image, Dr. B. Homolka (*Photogr. Korresp.*, Feb., 1907) reaches the conclusion that it consists of a mixture of an equal number of molecules of the perbromide and the subbromide of silver. The investigation concerns itself first of all with the question as to whether the substance of the latent image contains a reducing agent capable not only of effecting the oxidation of the ordinary developers, but also that of other organic compounds. In order to be able to observe conveniently an oxidation of this sort the product of the oxidation must be colored. Substances answering this requirement are Indoxyl and Thioindoxyl, two compounds nearly related to Indigo. Experiments showed that both these bodies were oxidized to indigo colors by the latent image or some component part of it. The addition of Sulphite of Soda hastened the development. In 5 to 8 minutes the development was complete and there resulted green or orange-yellow negatives with a

metallic lustre. These images consist of Silver and the indigo coloring matter. The indigo image and the silver image may be separated by placing the plate in some substance reducing the first to a colorless, soluble compound or by dissolving the silver.

The development of the latent image in an organic developer the author explains as follows: "The silver perbromide reduces the developer to a colored product and returns to the state of the bromide. The presence of this colored product causes the different character of the image when developed with different developers. The Silver subbromide is reduced to metallic silver." Luppo-Cramer has shown that an ordinary negative consists of two different substances. Whether these are the result of development and fixation or already exist in the latent image is the object of the experiments.

✽

Artistic Drapery

We can generally detect the portrait work of the novice in photography by noting the amount of attention which has been bestowed upon the flowing lines of the drapery. The first great difficulty the amateur has to encounter is the proper arrangement of the strength and incidence of his light, the great importance of which unfortunately appears to loom up so largely in his mind as to exclude some other points of equal interest.

How valuable some of our greatest artists consider the effect of drapery to be we learn from the elaborate studies Sir Frederick Leighton made preparatory to painting his figure pieces. He is said to have made over thirty studies for a single figure in one of his important pictures. The most successful of professional portrait photographers pay great attention to arranging the fall of the garments of their sitters, the height and breadth of the subject being materially affected by their disposition. Sleeves have much to do with determining the apparent proportions of the figure, either hid-

ing the lines which are not graceful or revealing and emphasizing an agreeable contour.

Much of the effect of every pose is dependent upon the fall and disposal of the skirt and train, the latter should be made to suggest the elements of stability and dignity which the suitable base supplies in statuary. The flowing lines of the skirt can be made to add to the apparent height of the subject if desirable, as well as aiding stereoscopic effects by the incidence of the lights and shadows. Different materials will produce their finest effects only in particular ways, thus a heavy material is most satisfactory with broad surfaces and deep folds and lighter materials with shallower hollows and rounded flutings. Quality of material must also be studied in relation to the fall of the light, a rough or dull material taking a fuller illumination than a thin or light colored one. Backgrounds of hangings greatly facilitate the securing of well placed lights and shadows with which to give a desirable "roundness" to the figure of the sitter.

Patterns are of the greatest importance, if at all pronounced. Curves and flowing lines will, as a general rule, prove most useful as aids to effect, but care is needed in arranging the folds in order to avoid any undesirable confusion of lines. A soft material which naturally drapes into agreeable lines is best without any pattern at all, and is far easier to manage in regard to lighting. Most large exhibitions contain valuable studies in the proper use of drapery in portraiture, recent years showing a great advance in the appreciation of its possibilities. Several of this year's most noteworthy portraits show the use of curtains and wall hangings as backgrounds, one of the most effective being employed to assist the pose of a lady who is just raising a portiere as if in the act of passing out. Such a pose is relieved of the usual formality of the ordinary portrait, with which we are all only too familiar.—*Photographic Chat*.

✽

People used to sit in strong sunshine thirty minutes to have a photograph taken and did not begrudge five dollars for it, now they can get twelve taken in less than thirty seconds for fifty cents, and still they are not satisfied.

Aims of a Great Painter

From Henry Copley Greene's "Eugene Carriere" in the *July Century*.

Structural and sculptresque beauty, human insight, the shaping of mass and line into a whole, the irregular harmony of which is enhanced by the charm of varying light—such, in brief hints, are Carriere's very personal aims and achievements. His studies, his groups, and his portraits accordingly contrast with Gerome's spick and span, or Manet's ironic masterpieces as absolutely as they differ from the prismatic triumphs of Sisley and of Monet. Carriere's paintings, moreover, are, if possible, yet more unlike the sentimentalist pictures adored throughout England. For Carriere, though he painted emotionally, painted with strength and a sane sincerity that make his works as little sugary as they are dazzling, or spic and span, or ironic.

Just what place their special quality may permanently give them, one can now only guess. Study of his lifework, gathered together, a year after his death, in that Ecole des Beaux Arts, where he so patiently learned the traditions that he afterward defied—study of all these masterpieces can as yet prove only this, that he opened a new path to the painters of to-morrow. As Rodin has said: "Better than his contemporaries, those who are still to come, those who shall understand, will work out his glory."

✽

In the *Agenda Lumière*, the Lumière Brothers publish for the first time the method of developement for their new color plate—the Autochrome.

These plates consist of an evenly distributed layer of starch granules dyed in the three primary colors under an orthochromatic emulsion. The principle of the process is this: If we distribute on the surface of a glass plate an even layer of transparent microscopic particles dyed respectively red, green and violet, it will be noticed that, provided the proportions are right, the result is free of color when viewed by transmitted light. On top of this is poured the emulsion.

If this plate is now exposed through the glass side in the camera, the microscopic transparent colored particles act as color

filters and a colored negative results, whose values correspond to the original, but are in the complimentary colors. From this a positive might be printed in the same manner, but it is preferable to obtain the latter direct.

The difficulties in the preparation of these plates were enormous. The object is to make a layer of these microscopic screens. This layer must adhere to its support, must be very thin; the color of the elements that compose it must be rigorously determined as to its intensity, its quality and the number of each kind. The colors must be permanent, must not run and the tiny grains must not be superposed nor must there be any blank spaces. Finally, the layer must be coated with a varnish of the same refractive index as the grains. The photographic preparation must be orthochromatized in such a manner as not to falsify the colors, and this orthochromatism must be in relation with the nature of the emulsion and the elementary screen used. The simple enumeration of some of these conditions shows how difficult it must have been to bring the method to a practical stage.

First the starch grains (potato) are separated by means of special machinery. These grains have a diameter of about 1-500,000th of an inch. They are colored in three lots, mixed in the proper proportions and spread on the plate, previously coated with an adhesive, by means of a badger-hair brush. They are then rolled in a special machine which gives them a polygonal outline and fills up the interspaces. After coating with an isolating varnish, which has the same index of refraction as the grains, they are covered with the emulsion.

The exposure takes place in the usual manner, but through the glass side, and employing a yellow screen to modify the action of the blue and violet rays. Due to the absorption of the various screens, it amounts to about one second in the sun with f6.

After mentioning the care to be exercised in handling the plates and describing the manner of placing same in the holders, they go on to give the following description of the after-treatment.

Solution A:

Pyrogalllic Acid (pure)... 3 gms.
Alcohol100 c.c.

Solution B:

Water 85 c.c.
Bromide of Potassium.... 3 gms.
Ammonia, density 0.92... 15 c.c.

To develop a 5x7 take

Water100 c.c.
Solution A..... 10 c.c.
Solution B..... 10 c.c.

Add Solution B only at the moment of placing the plate in the developer, as the latter oxidizes rapidly and will be black at the end of the operation. Development lasts exactly two and a half minutes, and is timed by a sand glass. Rinse for a few seconds and place in the following:

Water1,000 c.c.
Permanganate of Potash, 2 gms.
Sulphuric Acid 10 c.c.

When the plate is once in this bath, further operations may take place in white light. The permanganate solution dissolves the deposit of metallic silver, and should act in about two minutes. The progress can be watched by looking through the plate. When complete, the image already shows in colors, but these are to be made more brilliant. For this purpose, working always in white light, the plate is placed in

Water1,000 c.c.
Sulphite of Soda (anhydrous) 20 gms.
Diamidophenol 5 gms.

This is allowed to act for about two minutes. The colors will now be very plain, but are still further improved by intensification. After washing a few seconds in running water, followed by the application of a 1 to 10 dilution of the permanganate bath and another rinse, the plate is placed in the following intensifier:

Solution A:

Water1,000 c.c.
Pyrogalllic Acid 30 gms.
Citric Acid 30 gms.

Solution B:

Water 100 c.c.
Nitrate of Silver..... 5 gms.

For a 5x7 take

Solution A..... 100 c.c.
Solution B..... 10 c.c.

Little by little this mixture turns yellow and finally becomes cloudy, when it must be thrown out, and if it be necessary to further intensify, a fresh lot must be prepared, the two applications being sepa-

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Some Hints About Photographic Illustration for Magazines

By C. H. Claudy



PHOTOGRAPH to be used for illustrative purposes has several measurements of value. It may have a news value; it may have an exclusive value with or without news value; it may have simply the common or commercial value as a photographic illustration, or it may have a beauty value, in which class must be included those pictures which have value as art products.

A photograph which has news value has, as a general proposition, more value to a newspaper than a magazine, because the magazine handles news but rarely; the newspaper wants news first and other things when there isn't enough news to go round. News pictures which have a national interest are usually good magazine illustrations; local news illustrations are rarely so used.

If the town hall in your city burns down, unless it is something stupendous in the way of fires, a picture of it would be of little use to any publication beyond your local papers. But if the Capitol at Washington, D. C., could catch on fire, a picture of it would appear in newspapers, in magazines, in weekly journals, and years after, when the "Famous Fires of History" stories were republished, it would be used as a magazine illustration.

Exclusive value in a photograph is that intangible something which publishers are willing to pay for, and which consists in no one else having published the same thing prior to their publishing it. It applies particularly to magazine work, inasmuch as newspapers, using constantly syndicated material and appealing only to a strictly local audience, do not, as a rule, care a rap whether some other paper in some other town has published what they propose to publish or not—always supposing it isn't stale news. The magazine, on the contrary, has a national circulation, and as a rule does not want the pictures published to have been common property before using them. It is a somewhat delicate question when it comes to practice, and has a rule with many

exceptions, and the learning of it is somewhat of a task, but some flagrant violations are known and recognized and considered both unprofessional and dishonest. Not long ago I saw stated in a magazine the following, or words to this effect: "In making photographs for publication make several of each subject, each from a different viewpoint. Selling the different photographs to different editors will then raise no question, inasmuch as they are not actually the same photographs."

This is *all* wrong! If I make a picture—well, let us say of a new war balloon and its use by an outpost of the army of Japan, and include some one I can name as a famous general, and sell it to a weekly as an exclusive picture, do you suppose that I would ever afterwards do business with that weekly if they found I had sold another picture of the same war balloon, simply taken from a different standpoint, to another weekly for simultaneous publication? Not much! If I had made no terms for exclusiveness that might put another complexion on the matter. But in receiving extra money for exclusiveness the publisher virtually says to me, "Here; you may sell ten copies of that picture. It's worth to me what you would get for these ten copies not to have any one else have them until I publish the picture." If I agree to this, being glad to get my money without going after it, am I not giving this publisher the double cross if I evade the letter and break the spirit by selling some other publisher a similar picture, even though it is actually another photograph?

On the other hand, there are pictures which are exclusive in certain lines even if they have been used in others. For instance, if I were so fortunate as to procure a picture of the President of the United States steering a yacht, it would be a marketable picture with exclusive rights to several daily papers, then to several weeklies, and would not have a bit of its value taken off as an exclusive picture for some one boating publication, provided no other boating publication had had it or could get it. In the same way, if something brand-new and interesting comes up in photography, and I could get hold of it, it would not destroy its interest for a camera magazine that a general magazine had used it, or *vice versa*. The pictures which were used to illustrate my story on the focal-plane shutter in a recent issue of *THE CAMERA* were, some of them, borrowed from a motoring publication. This publication wrote me they had no objection to my using them in a camera magazine, giving credit to them, but would not allow me to use them in another motoring magazine for love or money!

The common or commercial value of a photograph as an illustration ranges from one to three dollars, rarely higher or lower. Certain people and firms keep large stocks of photographs on hand of every conceivable subject, place and thing, selling copies at a uniform price to publications. Thus an editor gets a manuscript from the retired police captain of a big city on "Famous Criminals I Have Known." Half a dozen photographs come with the MS. The editor writes one of these persons or firms and gets fifty photographs of criminals, apparatus, burglars at work, safes before, after and during the blowing up process, etc., etc., and can speedily pick out a complete set of illustrations to the story, paying from one to three dollars a picture for the privi-

lege. The same may be said of the pictures writers send with MS; they are commercially valued pictures, as a rule, demanding a small price, as stated, but not of enough importance, because procurable elsewhere, to demand a big price.

The beauty value of a picture is largely bound up with its exclusiveness, but its value is more for its beauty than because it is exclusive. In other words, if exclusive alone and not beautiful, it might be worth nothing. If beautiful and not exclusive, it would be worth something. Both together and it may be worth a good deal. Beautiful women, beautiful studies of children, beautiful *genre* studies and beautiful landscapes, all have a price among magazines, but the picture must excel in its line or it has little if any chance.

It is not infrequently that I receive letters from readers of this and other magazines asking me how they should go to work to enter the illustrative field. It seems difficult to make the way plain, and yet the doors are wide open. There are no restrictions. All you have to do is to make the right kind of pictures and your market is awaiting you. With hardly an exception photographs are published for their subjects, not because a certain person made them, and as between a five-dollar camera in the hands of a tyro, making a snap-shot of some famous person when that person was unconscious of the fact, and the finest photographic portrait of the same person made by the finest portrait photographer in the country (whoever he may be) I would take my chances on making money out of the amateur's snap-shot.

If you have pictures that you think would make good magazine illustrations, send them to the magazine you think they will suit. Send a short letter of notification of what you have done; be sure your name and address is on every photo and your letter, and wait results. If the magazine is reputable you will hear from them shortly. If you don't, in two weeks ask why. If you have a series of pictures, showing anything in the doing or making, or any person in a set of consecutive attitudes, so long as the person is in the public eye, send them. Don't send any editor a merely good photograph of scenery or of your town; he isn't interested. He might be in some historical object near you; there is no telling without trying. He is sure to be interested in a series if the subject fits his magazine, whether he buys or not. I wouldn't send a series of yacht races to a boot makers' magazine, or a set of pictures showing how plumbers work in apartment houses to a journal devoted to bee culture, but I have known of even poorer selections being made. Look up the publication you are going to try, and send them similar things, but different subjects. Don't send practical duplicates of pictures that have appeared. If you see a story on how pianos are made in a magazine, don't send another set showing how organs are made; but send something relative to some manufacturing operation; evidently the editor is interested in the manufacturing romance and likes to picture it. Use some judgment and first, last and all the time, and then a little longer, don't be discouraged when things come back!

I will say but little regarding the writing end of it. The man who can take good pictures and write a good story about them can more readily sell them than he who can't. In the same way the average writing is more easily sold with good pictures than without it. But a poorly written story may kill the chances of good pictures, just as rotten photos may kill a good story, so it behooves the man who would make money in this way to go slow on trying to do good work in a trade he doesn't know. And I will say now that it is a sight easier to learn to make a fairly good photo than it is to learn to write a fairly good story, as I can say who have struggled with both for many days.

Hints on Intensifying

By "Mortimer"

THE commonest method of intensification practiced to-day is perhaps the mercuric chloride, followed by ammonia or sulphite. Now, if the plate which it is intended to intensify is undertimed or underdeveloped so that the shadows show detail very faintly, this process will further weaken them and make the plate more contrasty, as the ammonia (or sulphite) no sooner blackens the surface of the image than it begins to dissolve away a part of the image, and this dissolving of the image goes on in the upper part of the film while the blackening is continuing deeper down; the thinner parts of the negative are made more transparent than before the treatment, while there is considerable increase in the density of the highlights. It is plain then that this is not the best way to improve a negative where mistakes have been made on the *short side* of exposure or development.

On the contrary, a negative which is flat by reason of overtiming, on development can be greatly improved by this method of intensification. The ammonia or sulphite should be allowed to act for a few seconds after the blackening shows plainly through the back (or glass side) of the negative.

An undertimed plate can be greatly improved by following the mercury with a ferrous oxalate developer.

Make a saturated solution of both protosulphate of iron and neutral oxalate of potassium. Take one (1) part of the solution of iron and pour into a measure containing six (6) parts of the solution of oxalate.

The very feeblest detail receives its due increase; nothing is lost that is on the plate.

Some of the precautions necessary to observe in order to make successful intensification: Thoroughly fix the plate. Be sure all hypo is washed out. Thoroughly wash between bleaching and blackening. Never allow white light to touch plate (which you intend to intensify) *before fixing*.



Action and its Suggestion

By Felix Raymer

THE "life" of a picture depends almost altogether upon the action, or suggested action, shown in it. If there is no action shown nor none suggested, one can take in all there is in the picture at a glance; but if there is a suggestion of action the interest never wanes. We go back to that picture many times, and each time wonder what new thought we will find. To secure action in any picture it is absolutely essential that the operator have a thorough understanding of the subject to be photographed. Where one is in doubt he certainly cannot give much force to his representations of nature. We have all heard men, when called upon for a short speech, say, "I am no speaker" and sit down. The reason they are not speakers is

because they are not familiar with and *thoroughly posted* on the subject they are asked to speak upon. There is no *art* in merely *speaking*, but the *art* comes in being so well posted upon the subject that one can place his thoughts before his audience in a smooth, even manner that is pleasing; so it is in securing action, or the suggestion of it, in pictures. An operator might say he is no artist. The reason he is not is because he does not *know* what he wants. His knowledge of nature is not sufficient for him to show nature in an artistic way.

Action can often be suggested by a simple turn of the head, the bending of the body, or placing of a hand. At the same time it must be remembered that certain action would be detrimental to the best effects in the picture. The operator must know what is pleasing and what displeasing. Some may think displeasing action will appear so to all alike. This is not so, however. I have criticized pictures severely on their showing of *false action* only to hear another critic praise them for their beauty of action. However, when one falls back *upon nature* for his teacher he has gone to the *great artist of all*, beyond whom there is no appeal. One serious fault to be found with operators is, when one speaks of *nature* they think we refer to the making of landscapes, forgetting that *nature* pervades everything, and the operator should be able to realize *all nature* and by so doing make himself competent to show nature in all his work.

To suggest pleasing action there should be a harmonizing of all forces contained in the picture. In other words, there should never be a time when two forces are pulling against each other. To use a few examples: If a man is posed so his feet are pointing in a certain direction his body should be turned somewhat in the same direction. Try turning the body in an opposite direction and see what a corkscrew effect it gives. Why? Because it is not *nature*. If an orator is using his hand for a gesture, his body, head and eyes should be turned in the same direction as his gesture. Try turning his body away from the gesture and see how it loses force. The same is true when the head or the eyes are turned away. Why? It is not *nature*. When I say all these forces should be turned in the same direction I do not mean they should be *exactly* the same, but they should be turned in one *general* direction, so as to give the impression of there having been some definite plan or idea in making the picture. To have them all in *exactly* the same direction would show *posing*, and that is a fault many are guilty of. I call attention to the picture used in illustrating this article; it is a scene from "Rip Van Winkle," and was made with the three characters in *full action* going through their lines. Notice there is a central *idea*, *figure* and *action*, and all other forces but add to this central interest. Rip is the central figure, and represents the full force of action and holds in his hand the central idea—the cap. All other forces are merely accessory to these three. The entire picture, as a piece of *art*, depends upon the action *shown* by the central figure, and the action *suggested* by the other two figures. This picture was made by *flashlight* to show that the flash is quicker than any movement possible by the subject.



MR. JOSEPH JEFFERSON, JR.

MISS MINNETTE RAYMER

MISS GLADYS RAYMER

**Cramer Plate, Banner X
Nichol's Flash Lamp
Nichol's Powder, ½ oz.
Goerz Series III Lens
Carbon Print**

**PHOTO BY
FELIX RAYMER**



PHOTO BY
MARY CARNELL

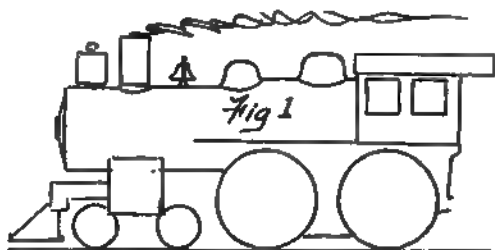
Distortion with the Focal Plane Shutter

By Chas. F. Rice



FOCAL PLANE shutter differs from all other shutters in that it exposes the plate in sections and not all at once, and this is also the reason why pictures of moving objects taken with this form of shutter are distorted.

Let us say we have to take a picture of a locomotive traveling very fast—sixty miles an hour—at right angles to the way the camera is pointed. It looks something like Fig. 1 to the eye.

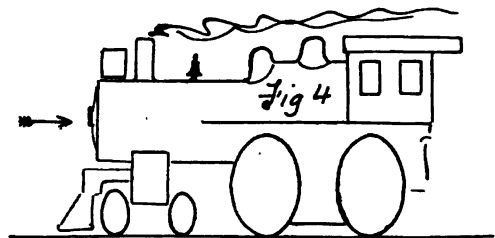
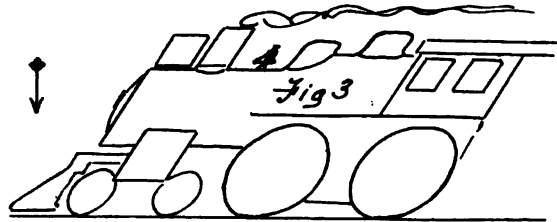
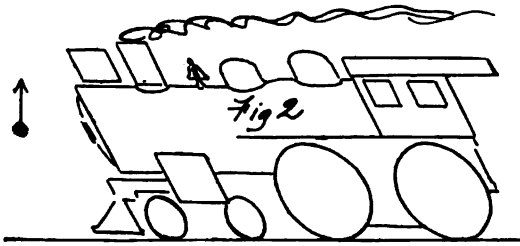


The slit in the shutter normally travels from top to bottom. We must remember that the image formed by the lens is reversed, so that as the slit moves across the plate, from top to bottom, it first exposes the wheels of the engine, then the boiler, cab, etc., and finally the smokestack and other fixtures on top of the boiler. Of course, the engine is moving all the time the exposure is being made, and the top of the stack will have moved forward between the time the wheels are exposed. Therefore, the picture will be out of shape, something like Fig. 2.

Whichever way the shutter is driven there is bound to be distortion, as shown also in Figs. 3, 4 and 5, in which the arrow shows the direction in which the slit moves in relation to the image.

The figures are somewhat exaggerated, to make the illustration clearer, but it may easily be shown that in actual practice the distortion is quite appreciable.

Thus, if the engine is going sixty miles an hour it covers eighty-eight feet a second. Let the slit in the blind be adjusted to a width of one-tenth of an inch. The image of the engine is five inches long and two and one-half inches high, representing thirty feet the length and fifteen feet the height of the object itself. The slit will travel five inches in one-twentieth of a second, giving



an equivalent exposure for each point in the image of one-one-thousandth of a second. In this very brief space of time the engine would move about one inch, or there would be a blurring of the image of one-seventy-second of an inch—not very noticeable. But the distortion would be very much more evident.

If the slit travels from top to bottom, one-fortieth of a second will elapse after the bottom of the wheels is taken before the top of the stack is recorded in the picture. One-fortieth of eighty-eight feet is approximately two feet. *The whole engine will be pictured as two feet out of plumb.* Truly this is quite a serious inaccuracy.



No. 3

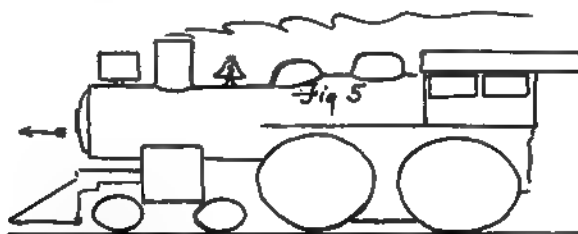
If the picture is taken as in Fig. 4, the engine will be four feet shorter than it should be in relation to its height, while in Fig. 5 the engine is represented as four feet longer than it really ought to be—a sort of dachshund engine.

The locomotive makes a very good test object with its wheels and straight lines. It is very often the case that the wheels are the only portion of the picture where distortion is noticeable. But there you can always detect it. The wheels will be egg-shaped and never perfectly round, as they should be.

No. 4 A

These egg-shaped wheels can be seen in newspaper and magazine pictures of automobile racing. One magazine writer, describing auto racing, evidently believed the camera incapable of lying, and was taken in by a focal-plane misrepresentation, for he wrote that the terrific speed caused the wheels to assume an oval shape.

Distortion of the moving object can be largely obviated by following it along with the camera, as a gunner might aim at a flying bird, but then the background will be out of shape. Most of us have seen the picture of the horse trotting close to a fence, in which the fence is blurred and the posts all bent over in the same direction. Another case of focal-plane distortion.



At the present time the focal-plane shutter is the only kind capable of very high speed. Not only that, but the focal-plane shutter used at the same speed as the diaphragm shutter allows several times as much light to reach the plate. This means much when the light is poor or when a small stop must be used in the lens to gain depth.

Thus it is that, notwithstanding its undeniable distortion, the focal-plane shutter is in these two important respects—speed and light-passing power—far and away superior to all kinds of between-lens shutters now available.

Depend upon it, however, inventive genius will sooner or later evolve a form of diaphragm shutter that will work effectively at high speeds, and, of course, without distortion.

The writer has nothing against the focal-plane shutter. It has often stood him in good stead, but the principle of its action—taking the picture in sections—is wrong, and not to be depended upon to give a truthful representation of moving objects.

The accompanying photographs show very plainly the distortion produced by the focal-plane shutter. If the reader will examine them all carefully, he will see that each locomotive is noticeably distorted.

In taking Photograph No. 2 the slit moved downward—its normal course. Of course, it must be borne in mind that the image is reversed in the camera, and that the wheels and lower part of the locomotive were first recorded on the plate. As the slit moved on down (but really *up* on the image), it exposed the boiler next, and finally the smokestack. When it got to the top of the stack that part of the engine had gone ahead a foot or more since the wheels had been exposed.

Photograph No. 3 shows the result of driving the shutter up. The engine seems to lean backward.

Note the oval wheels in both cases and the distortion of the cab.

In Photographs 4-A and 4-B the slit moved across the plate from right to left, while the image of the locomotive went across in the other direction; that is, from left to right. (Remember that the lens reverses the image.) In this case the pilot and front of the engine were taken first, and as the slit moved back the image moved forward. Consequently, the engine is represented as shorter than it should be in relation to its height.

Note again the oval wheels, with their shortest diameter horizontal.

In Photographs 5-A and 5-B the slit was reversed and had to overtake the image of the engine as it traveled across the plate.

Here the wheels are oval, too, but their shortest diameter is vertical.

Photographs 2, 3, 4-A and 5-A represent locomotives of the same type and same general dimensions. Photographs 2 and 3 show the length of the engine to be 2.47 times the height, while Photograph 4-A shows the length 2.28 times the height, and in Photograph 5-A it is 2.76 times the height. But these measurements are hardly necessary. The unaided eye can easily detect the difference between Photographs 4-A and 5-A.

The distortion is shown most plainly perhaps by comparing Photographs 4-B and 5-B, which are of a different type of locomotive, having but two drive-wheels on each side. Notice in the case of 4-B how everything about the engine looks squeezed together. The headlight and smokestack are tall and narrow. In 5-B it is exactly the reverse—everything is drawn out. The headlight and smokestack look short and thick.

There is still another effect of distortion to be seen in Photograph 5-B. The rear drive-wheel has not turned around quite so far as the front one. This is because the shutter first exposed the rear wheel. A true picture would show them both turning exactly in unison.

Owing to the absence of smoke, Photograph 5-B seems at first glance to be a picture of an engine standing still. The fact that the image is distorted is the only proof to the contrary.

As a matter of fact, all the locomotives were attached to express trains and were traveling at from fifty to sixty miles an hour. The pictures were taken a little past the middle of a long straight stretch of track on the N. Y., N. H. & H. Railroad, where the trains often make up lost time.



BROOK IN WINTER

G C ELMBERGER

THE CAMERA Silver Medal
Competition No. 105



Honorable Mention
Competition No. 105

A. F. VOIGT

In and Out of the Dark Room

Third Paper

By Richard Trotter Jeffcott



THE making of lantern slides and their successful production is of considerable importance when considered in connection with a lecture, particularly on such a topic as I have selected.

It is not my purpose, however, to go into details regarding the making of slides, but rather to present a very good formula given me by Mr. C. Shafer, of the Hammer Dry Plate Company.

Many of the slides just shown have been developed as per the following formula, with a slight modification that I will mention after you have had an opportunity to note the slide now presented:

DEVELOPER FOR LANTERN SLIDES.

| | | |
|------------------------------|----|------|
| Water | 20 | ozs. |
| Sulphite Soda (Anhy.) | 2½ | ozs. |
| Edinol | 96 | grs. |
| Carbonate Soda (Anhy.) | 1 | oz. |

The modification, or rather addition to the above, would be the addition of five (5) grains of Hydrochinone.

For some negatives, as originally given, the formula will produce an ideal slide of proper color and rich quality. Then, again, some subjects, to obtain the proper effect, require more contrast, and it is here that the addition of Hydrochinone is valuable. Each worker has his own pet formula for this especially interesting branch of photography, and the above is presented only with the hope that in experimenting you will not overlook the combination of Edinol-Hydro as a flexible and easily controlled developing agent.

Plates or films which for various reasons show a yellow (pyro) stain are generally bothersome when printing from. The cause of such staining can be traced to a definite conclusion, yet careless buying of poor chemicals and methods of manipulation have much to do with this trouble, and can be easily avoided.

I do not desire to be understood as being against the slight yellow color imparted to pyro-developed negatives, yet, a considerable amount of this "color" is undesirable.

You probably have among your negatives some that for the reason given prove poor printers, and the following formula, if followed, will in all cases entirely or partly improve them:

REMOVING PYRO YELLOW.

| | | |
|---------------------------|----|------|
| Water | 16 | ozs. |
| Muriatic Acid, C. P. | 1 | oz. |
| Boracic Acid | ½ | oz. |
| Ground Alum | 1 | oz. |

The above can be made up and will keep for a considerable period, and can be used repeatedly. The only trouble I have found, is in dissolving the boracic acid; but this at last can be accomplished. Perhaps it is best to place the dry negative in your acid-fixing bath for about fifteen minutes, then wash thoroughly

and place in a tray; pour over your "Stain Remover," and the length of time required will be governed by the "depth of color" to be removed.

Our illustration (Fig. 19) represents a makeshift apparatus, yet it answered my purpose very nicely. Some months since I had to make a set of slides from 3a Kodak negatives, and not being specially prepared for the work and time being limited, it was "up to me" to produce. On two trestles I placed a board, on which a 4x5 camera was arranged. Between the window (north light) and the camera, a line was ruled on the board indicating the correct position for my negative support (a $6\frac{1}{2} \times 8\frac{1}{2}$ printing frame). Covering a portion of the window with tracing linen, a soft, even lighting for my exposures was obtained. The use of tracing linen in place of ground glass is desirable, avoiding any chance reflections from outdoor sources. As previously stated, the whole was a makeshift apparatus, yet in looking more carefully into the method of working I think you may agree with me that some of the ideas might be incorporated into a really up-to-date outfit for the production of lantern slides by reduction or enlarging. The $6\frac{1}{2} \times 8\frac{1}{2}$ frame is one known as two-thirds opening. Two sheets of very thin glass were used in the frame. On the first glass was pasted a mask of black needle paper with an opening $3 \times 5\frac{1}{4}$ inches. This opening extended nearly to the top of the frame. Everything being ready, the frame was laid face down, the negative adjusted to the proper position, the second glass carefully laid over it and the whole secured in position by the lower third of the printing frame back.

The frame was then placed on the ruled line and the other portion of the hinged back was used as a "steadier" and support. An ordinary wooden box was utilized to support the camera and obtain the proper height. Moore push pins were used to keep all in place when the correct position was found. It may truthfully be added that the resultant slides were all that could be desired in spite of the improvised outfit.

Some years since I became more or less interested in "Silhouette photography," and while my mistakes were numerous in the production of such work, yet the methods employed may be of interest. My attention was first attracted to the matter by seeing an account of black and white figures produced by a pair of scissors way back in 1850. The interesting data in connection with the illustration has slipped my memory, yet the cut herewith shown (Fig. 20) found its way into my scrap book. At the time stated the simple method of cutting from black or white paper "resemblances" in silhouette of family groups was much in vogue.

The following plan I found most satisfactory in making my silhouettes, and after careful adjustments of the source of light and position of sitter in connection with the screen I was (after numerous failures) quite taken with the possibilities of the experiment.

The following description of my first efforts in this line may perhaps be of interest. An open doorway between connecting rooms was selected for my purpose. The entire opening was first covered with cheesecloth stretched tightly. A stool was arranged for the subject on the side of the screen nearest

Fig 19



Fig 20

Fig 21

Fig 22

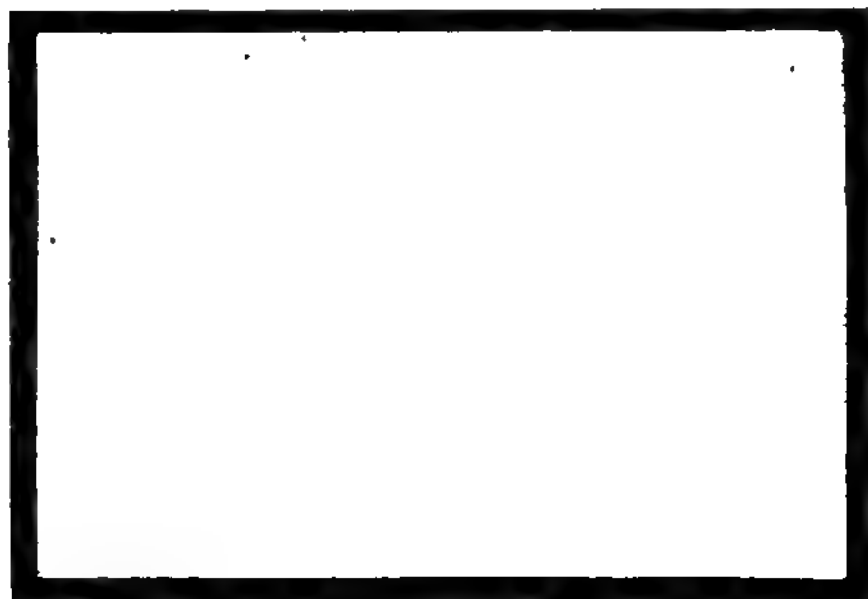
Fig 24

Fig 25

Fig 23

the camera. Focusing was obtained by artificial light, care being used that the outline was critically sharp on the ground glass. Directly back and on a line with the centre of the screen in the rear room a small stand was arranged for a flash lamp. Entrance to this room was obtained through another door, thereby arranging camera and sitter after the flash apparatus had been "fixed." All lights being put out, the shutter being opened on "time," a pressure on the flash lamp bulb connected to a point near the camera produced a slight flash, but with sufficient power to give the correct exposure. My first attempt (Fig. 21) was declared a failure, and the reason was twofold. First, the amount of powder used was much in excess of the desired quantity; second, the sitter was placed too close to the screen, thereby catching on the shadow side of the face too much light reflected from the screen. Further experiments produced much better results, and taking into consideration the simplicity of the arrangement, desirable effects can be readily produced. The importance of careful development of the plate can be laid aside. Select a medium-fast plate, a developer producing great contrast, and leaving it to its own sweet will is about the best advice I can give you regarding the proper care in developing. On completion of the negative various effects can be produced with brush and opaque as to the proper method of finishing the "line" when making bust or three-quarter figures. Velox paper is the best printing medium, producing extreme contrasts in black and white. Suitable effects as to mounts can be readily procured if desired, but postal card or double-weight paper, unmounted, is preferable.

Were it not that photography had an experimental side, perhaps I would



THE CAMERA Bronze Medal
Competition No. 105

MISS T. B. KING

Honorable Mention
Competition No. 105

M. B. McDOUGALL

hardly feel so devoted to its interests. Our slide (Fig. 22) shows a collection of articles that even the novice may find both useful and altogether needful in his work. The hydrometer, known, perhaps, better as an actinometer, finds itself of use in the testing of sulphite and carbonate solutions. Many formulæ are given where only the "hydrometer test" of both chemicals is named. For myself I prefer the use of dry sodas and an accurate scale, relying on the maker that he has produced the best in that particular line. In the event that anything goes wrong with the solutions, a reference to the hydrometer test is indeed useful and indispensable.

A good "bath" thermometer is extremely useful in darkroom work, particularly as to the degree of temperature in connection with solutions is of vital importance for their proper working, and especially so when tank development is employed.

The dropping bottle has its use and is, perhaps, the most accurate method of adding "per cent." solutions, such as bromide, to the developer. Its cost, about 25 cents, makes it within the reach of all, and in time its various applications to photographic work will be better appreciated.

Ready prepared powder developers have found many adherents, both for their simplicity and the good results produced; but the best effects are obtained by the absolute dissolving of each ingredient. The mortar and pestle are here found useful and convenient. The kind known as "Wedgewood" is superior to one of glass, not being so easily broken. Attention here is called to the fact that the thorough washing of this article must be attended to immediately after use.

Perhaps the percolator has but little use in the workroom of the "snapshotter" of to-day, yet its use in experimental work cannot be denied. Usually a metal holder or support is used in connection with it. The support is furnished with

an adjustable collar, and so arranged that vessels of various volume can be placed directly under it to receive the fluid.

Hot water in small quantities is often of use in laboratory work. Perhaps the best method of producing it readily is having a gas heater permanently connected for instant use. For instance, the best hydrochinone developer is produced by dissolving that chemical in hot water and thereby determining its keeping quality for a long period.

An agate saucepan will be also found an indispensable darkroom article, although not found listed as a photographic adjunct.

To the serious worker the "view camera" probably appeals the strongest when considering the purchase of a camera. Then, again, as each part of the outfit is being selected special attention should be directed to the plate holders, when one considers that a hard day's outing, as far as results go, may be entirely lost if the holder leaks light, or should fail to keep the sensitive plate in coincident register with the ground glass. Quite recently the Folmer & Schwing Company placed on the market an improved Graphic holder, which, by the way, can be adapted to any form of hand or view camera. Probably its main point of superiority lies in the fact that, no matter how carelessly you put in the slides, you cannot fog the plate. Let us look at our illustration (Fig. 23) and note that when the black felt covering is rolled back a specially designed cut-off of brass is so arranged that when the corner of the slide is pushed in only the "fingers" directly in contact depress. The others remain stationary, thereby precluding the possibility of light striking the sensitive surface. I borrowed this model holder specially to illustrate my point, and have it here for those who may like to examine it more closely. Then, again, two other features in this holder appeal very strongly as you minutely examine it.

First. A brass spring riveted to the septum will hold your plate in positive position irrespective of its thickness.

Second. The arrangement for locking the plate in the holder is to be commended. Slipping the plate under the top guide, it is gently pressed into position, while a slight movement of two bottom guides, which advance from each corner, lock the plate firmly and thereby holds it in a positive position.

A little while since I mentioned the importance of knowing that your plate in the holder and the ground glass (on which your view is shown) must be in coincident register. No matter how good your outfit may be, you should be positive of this important fact. Perhaps you have had trouble and knew not where nor how to locate it. We will suppose that such is the case, and the following explanation of such a test, that is, as applied to view cameras (which have the ground side of the focusing screen inside), or rather toward the lens. For your test supply yourself with a wedge (cut from hardwood and being absolutely true), also a metal straight edge. Take your ground glass screen, lay it flat on a table or bench, having the ground side toward you. Now, lay your wedge on the glass and carefully place your straight edge on the frame (against which the holder travels when in the camera), for instance, from corner to corner and then across the centre. Note and mark the exact position it touches the wedge and see that it is at the same point at various positions.

Our slide (Fig. 24) shows the application as applied to a plate in the holder. If the point of contact is the same in the holder and ground glass test, then the plate and ground glass are in coincident register. Manufacturers of cameras use various tests as per the special construction of each camera, but the above test will be of benefit to you if you have any doubt regarding this point and if your camera is of the "view" type. At this point a practical demonstration was given of the above-described test.

Before I close I want to mention something pertaining to photography that is new, and which I had the pleasure of examining at Rochester recently. As shown in (Fig. 25), the apparatus known as an "insurance camera" presents quite an elaborate apparatus. I am not going to describe it in detail, but an outline of its usefulness as applied to the insurance business will be sufficient. On a specially constructed cabinet a large copying camera of extreme length of bellows is mounted. Attached to the projecting cone is a high-grade anastigmat lens, to which is fitted a prism. Directly beneath the prism a table or shelf is arranged to hold the original insurance application blank. Now, with a roll holder containing specially prepared bromide paper any number of "copies" of this application blank can be made and made absolutely like the original, without the chance of error as would appear if copied in the old way by copyists. The only difference in the finished print is that its character has changed, being white lines on a black background. The cabinet is supplied with a special tank for developing and fixing the bromide prints. I have been told that the cost of such an outfit is in the neighborhood of \$500, but this will be of little moment when consideration is given the labor saving and absolute results as applied to accuracy in copying the original document.

It was the intention of the writer to incorporate in this article the last section of this lecture "The Construction and Application of a Testing Chart." However, this article has already appeared, having been published in the initial number of the *Bulletin of Photography*.

[EDITOR'S NOTE.—Mr. Jeffcott will be pleased to help all writing to him regarding their photographic work, and can be addressed care of John Haworth Company, 641 Arch street, Philadelphia.]

Stops, Lenses and Perspective

By J. H. Agar Baugh



THE method of measuring or numbering stop apertures, as published officially by the Royal Photographic Society, is, I think, rather out of date. The method now employed for continental lenses is to get the efficient aperture by focusing the sun on the ground glass, substituting for the ground glass a piece of ferrotype plate with a pinhole in it, putting a light behind the pinhole and measuring the circle of light on the front lens. I cannot see why the old-fashioned method of the actual diameter of the stop-aperture should remain on the Society's books as the official method; that which I have described is used by all the best lens-makers, and I think the Society should expunge the other plan from its records. The United States stop-apertures are equally antiquated, only $f/8$, $f/16$, etc., are now used.

I have here four lenses of the same focus, but with working apertures of $f/2.3$, $f/5.4$, $f/7.7$ and $f/11.3$ respectively. In my own experience I prefer the $f/11.3$ lens; I seem to get sharper images with it than when using the other lenses stopped down to the same extent, and I put it down to the thinness of the lens. There is no room for the light to go backwards and forwards inside—there is less stray light in the camera; and I believe that an $f/5.4$ lens, for instance, stopped down to $f/11.3$, will never give as good results as an $f/11.3$ lens will give at full aperture. I have never seen any statement in print to that effect, but in practice I find that it is so, not only with big lenses, but also with cinematograph lenses, and I attribute it to the fact that there is less reflection and less stray light in the camera caused by the lenses being smaller in diameter and thinner.

The usual method of selecting lenses for cameras of different sizes is, I think, not quite satisfactory. I do not think it is on the right basis, and I want to propose some considerations that I have not found mentioned in any photographic book.

No person of normal sight can see any photograph correctly—perfectly correctly—unless it is at a distance of at least ten inches from the eye. As a rule, I believe the distance is about twenty inches; I find that nearly every one holds a newspaper twenty inches from the eye. Plates, etc., on a table are also about twenty inches from the eye. I think, however, oculists put the distance at ten inches. For prints on paper I think that no photograph should be taken with a lens of less than ten inches. If, in the case of small cameras, half-plate or quarter-plate, a lens must be used of less than ten inches focus, the lens with which the photograph is taken, or a lens of approximately the same focus, must be held to the eye, in order that the image may be seen correctly. If a photograph is taken with a five-inch lens, and it is desired to observe it correctly and comfortably and with correct perspective and without holding a lens to the eye, it is necessary to enlarge the picture; that is to say, if a quarter-plate picture has been taken with a five-inch lens, it must be enlarged at least twice, if not four times; the resulting picture is equivalent to one taken with a ten-inch or a twenty-inch focus lens. It could then be held at a comfortable distance from the eye and seen correctly.

With regard to the rising front, a photograph taken with a raised front and the camera tilted must not be viewed with the eye exactly opposite the centre. At photographic exhibitions I do not think the Hanging Committees consider whether the pictures were taken with a rising front or not, but they should do so if the pictures are to be correctly seen. I propose to use an Abney level whenever I use the rising front.

This instrument can be carried in the pocket, and vertical angles can be very easily measured with it. Then if a picture is hung on the wall, I should place it at such a height as to get the same angle from the usual point of observation as that from which the photograph was taken, and then the object will be seen correctly.

In taking tele-photographic pictures the level could be used in another way, by placing it on the baseboard of the camera, as the rising front is not usually used for tele-photo work.

I have here a print, taken with a tele-photo lens, giving about ten magnifications; it must be held at a particular angle above the observer's eye, and at a distance of eighty inches, to be seen correctly. If one looks at the centre of the picture it appears absurd, but when held in the proper position it is seen quite naturally.

In the same way an object taken with the camera perfectly level should be hung exactly opposite the level of the eyes, standing; if it were hung in a room, hall, or where it would generally be seen by persons who were sitting down, it should be placed at a suitable angle from the position at which it is usually seen.

I strongly object to photographs taken with very wide angle lenses. I think, first of all, that they are absurd. In the case of a church tower, where a wide angle lens has to be used to get all of the subject on the plate, the print must be seen in a particular way, or if enlarged it must be enlarged to a considerable extent; as such subjects include a larger angle than can be seen by the eye at one time, the degree of enlargement must be such that the observer must turn his eye from side to side to see different parts of the photograph. I therefore suggest that a photograph of a church tower should be taken just in the way that the eye would look at a tower. If we are close to a rather tall tower in many cases it will not be seen entirely without movement of the eye, and I suggest that such photographs should be taken in sections at different angles and then joined together—I think that can be satisfactorily done—and then the photograph of the whole will be natural. I think it would also, as a rule, have to be enlarged, or taken with a lens of very long focus, so that it could be held at a sufficient distance from the eye.

In connection with the use of the Abney level, I should have mentioned that it does not matter how much the rising front is used, or if the camera is tilted as well. Cross lines must be ruled on the ground glass and the object at the intersection of these lines must be observed with the level and the angle read off.

I think it is too much to expect that exhibitors will state on their photographs the angle at which they are taken and foci of lenses used, but still I

think the Hanging Committee might notice whether a picture has been taken with the rising front or not and hang it accordingly.

It is well known that artists often use very long paint brushes, and you will find that in a gallery people stand at different distances from the picture, so as to focus it to their eyes.

As regards catalogues of lenses, I do not know whether it would be possible to adopt some other method than always suggesting, say, a five-inch lens for a quarter-plate. I think it is a mistake to call any lens a half-plate or quarter-plate lens, and as far as I am concerned I never use that method. I suppose we shall hardly yet be able to have a catalogue simply giving the diameter of the image covered with different stops, but I think that would be the ideal arrangement.

Some time ago a member showed some prints from negatives taken with lenses of different foci; he preferred one taken with a rather short-focus lens, but I thought the long-focus one was much better. I think shortsighted persons will naturally prefer photographs taken with a short-focus lens, because they can hold them nearer to the eye, and those who are farsighted will prefer pictures taken with a long-focus lens, and I think that as a general rule they are more pleasant to the eye. I have always found that objects seen through a telescope appear very beautiful; and I believe that the narrower the angle at which an object is seen the more comfortably it may be seen, and that the wider the angle the greater is the strain upon the eyes. I have known field-glasses to give a very wide angle of view, but they have had to be dropped very quickly because they seemed to hurt the eyes, and experiments made by my firm have borne this out. It has been found, too, that microscope eye-pieces giving a very large angle produce a strain upon the eyes. Some day I hope to get an eye-piece made with an iris diaphragm so that the angle of view may be made very small, and I am sure the eye will be made more comfortable. Microscopists and people who use telescopes have found this to be the case, and I believe it is the same with photographs as well.—*The Photographic Journal*.



Developing Under-exposed Plates



IN spite of the numerous aids to securing correct exposure, under-exposure is by no means uncommon. Even when the photographer knows exactly what exposure ought to be given, circumstances sometimes compel him to give less than he wishes; as, for instance, in snapshot work, or in landscape, when a strong wind is blowing, and he wishes to avoid a blurred effect. Instructions in regard to most of the two-solution developers say for overexposure take more A; for underexposure, more B, the latter generally being the alkali or accelerator. And when the beginner finds that a long time elapses before the image appears, he usually commences to add accelerator in no small quantities. If the plate is unduly forced in

development there is great liability of chemical fog, and there are much safer ways of dealing with underexposure.

Undoubtedly the best method is to keep the plate immersed for a long time in a dilute solution of developer. This allows the detail, if there be any, in the shadows, to develop without giving undue density to the highlights, and a much softer negative ensues. Forcing the plate usually gives a harsh result. If, then,

C. O. TOWLES

See page 358

Photo made with the new Towles Flash Lamp
15 grains powder, 21 X 14 plate



it is found that the plate has been underexposed, and a normal solution is being used, the plate should be removed from the dish and transferred to another containing a solution diluted with, say, five or six times the usual quantity of water. If the plate be left in this and an occasional rocking given it, it will gradually gain density until the maximum is reached. This is the principle operating in stand, or prolonged time development, and it is far in advance of forcing by excess of accelerator.

Sir W. Abney gives a hint on developing underexposed snapshots, which the reader may like to try. He advocates taking the plate from the developer when the image begins to appear, draining it, and allowing it to stand for a couple of minutes. This, he says, brings out the shadow parts, for the developer goes on working upon those parts until the silver is reduced, whereas the effect on the highlights is very much less, the developer having exhausted itself by producing them.

A developer recommended for underexposed plates, and one which gives a soft result with all the detail it is possible to get, is metol; and a formula is given below. It may be remarked that many people find the use of metol has an irritating effect upon the skin, making the fingers very sore. To prevent this, rubber finger stalls should be worn. They cost but little, and the discomfort is thereby avoided.

METOL DEVELOPER.

No. 1.

| | |
|----------------------------------|----------|
| Metol | 100 grs. |
| Pot. Metabisulphite..... | 10 grs. |
| Pot. Bromide..... | 20 grs. |
| Water (distilled or boiled)..... | 20 ozs. |

No. 2.

| | |
|-------------------------------|---------|
| Sodium Sulphite (crys.)..... | 2 ozs. |
| Sodium Carbonate (crys.)..... | 20 ozs. |
| Water to make..... | 20 ozs. |

For use, take equal parts Nos. 1 and 2.

The image flashes up very quickly, and must be developed fully.

The heating of the developer is recommended by some when dealing with underexposed plates. The dish should first be warmed by being filled with hot water, then the solution should be heated to, say, 75 deg. F., by standing the measure in a hot water bath, and the plate itself should be carefully warmed, previously running a wax candle round the edges to prevent frilling. These tactics are liable to end in disaster if the worker is inexperienced, but have been very successfully employed by some workers. If the developer be too warm, however, when dealing with plates that have had approximately normal exposure, general fogging will take place, so that heated solutions should only be employed in cases of known underexposure.

It is well to remember that prolonged development with a strong solution will result in a harsh negative, for the highlights will gain density out of all proportion to the shadows. Forcing, in the hope of getting out detail, is a hopeless proceeding.—*Focus*.



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AN INDEPENDENT MONTHLY MAGAZINE DEVOTED TO THE
ADVANCEMENT OF PHOTOGRAPHY

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gladly received.

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SEPTEMBER, 1907

We cannot urge upon our readers too strongly to make it a point to attend the conventions, more particularly the National. Each year we make the National and often many of the State conventions, and in each case we have been amply repaid for our journey. New ideas are bound to be brought forward, and the best thoughts and ideas of the best workers freely discussed. The convention at Dayton was no exception to the rule, and no better argument can be offered than the remark made to us by Mrs. Mary Carnell, of Philadelphia. We asked her if she had reaped benefit enough to pay her for the time and the trouble she had taken to reach Dayton. "Pay me? Why, money could never do that. I've learned more in two days than I normally could in as many years, and then I meet so many friends. I wouldn't have missed the convention for many times what it cost to come. All work in the same rut doesn't pay, and I want to see what the others are doing."

And so should we all think. It is what we learn and see that pays us, and if a photographer cannot accept ideas from others,

then it is time for him to quit. We met one photographer who had been in the business for nearly thirty years, and this was his first convention. That he was amazed goes without saying, and when we asked him if he thought he had learned anything he said: "They've had twenty-seven of these things, and I am twenty-seven times a fool. I've been asked to attend every time, and now that I'm getting old I see things that will make me begin over, and you can bet I'm going to Boston this month, too. You don't catch me missing a good thing again."

✽

Few people have courage to be honest in matters of taste.

If admiration be not felt it is so easily affected. One may safely descant upon the exquisite beauty of the antique or upon the glories of the Renaissance painting without much fear of encountering contradiction, and likewise condemn modern productions of art.

Hence, therefore, the strange inconsistencies and vapid generalities by which true taste is often confounded and silenced. But the photographer who is compelled to take a subject under conditions of bad illumination has no such recourse to hide his lack of skill, and so his view or portrait comes in for a full blast of condemnation and he is blamed for his want of taste or his selective ability. These unavoidable conditions of illumination are oftenest imposed upon the photographer when he is taking views of architecture. In portraiture, even in the bad lighting of the ordinary living-room, he has, in some measure, control over the illumination, and is able to bridle, as it were, the refractory light; but in taking a building there seems to be no means, before or after, in getting an effect which he knows would prove artistic and acceptable.

Surrounded by numerous conflicting, reflected, borrowed or sidelights, architecture, however fine in itself, becomes frequently little better than an unmeaning, shapeless mass of marble and brick or concrete.

It is not our intention in this mere paragraph to speak of architectural illumination, but merely to emphasize the importance of selecting a time, when possible, when the

sun moves round in its varied course to best characterize the end and purpose of the designer of the architectural pile. The importance of this selection is manifest, yet how rarely do we meet with any corresponding result. On the contrary, because of not reverting to these circumstances, this arrangement is generally so injudicious as greatly to diminish and often to annihilate its beauty.

If architecture be not properly lighted, so as to draw forth the intention of the artist, that which is of the highest order seems, in the photograph, little better than a very ordinary structure. But under proper illumination the exquisite superiority is at once apparent; just as, in music the finest old Cremona in the hands of a common performer seems no better than a fifty-cent fiddle.

✽

Finders That Don't Find

Nine-tenths of the finders attached to cameras are defective, and the great percentage of failures in hand camera work may be traced to the finder in its usual form.

What we want is a practical instrument. The weak point of the regular reflecting finder is that with the camera held down against the chest it gives only an unnatural, low viewpoint, with reduced perspective, and there is no possibility of seeing anything outside the picture itself. In street scenes it is essential to be able to see beyond the margin of the subject, and thus avoid the inclusion of any intruding figure which would escape attention in the dark corners of the usual finder. Or, again, in seascapes, the critical moment for exposure is far more readily determined if we are looking directly at the view and watching for a happy combination of the waves that shall complete our composition.

Some photographers are so disgusted with the imperfect finder that they discard it altogether and trust to a kind of instinctive sighting of the camera itself. Others again use rifle sights and also square frames with cross-wires or hairs which, to a certain extent, serve as view meters as well. Others sight along one corner of the camera box, and it will surprise those who have not tried this method to learn how much may be

accomplished by care and skill exercised in the endeavor.

In designing finders they should be reduced accurately to scale, according to the focal length of the lens and the size of the plate they are to be used with. If this were always done there would not be so many complaints, and this little indispensable adjunct would be better prized.

✽

Color Screens

It is a prevalent opinion that the essential in the so-called color screen is its yellowness. Anything, we are led to believe, will do for a screen, so it is yellow—that is, cuts off in a greater or less degree the active rays; or rather, we should say, retards their action. Its application, therefore, in conjunction with the orthochromatic plate, is made without consideration as to what results are desirable. The particular yellow color of the screen is not so much a matter of consideration as the selecting of a suitable absorbing color matter, even though it give us a perfectly colorless screen. Perhaps lack of color is the more desirable if it were possible to have a screen so constituted.

Some substances have the power to cut off certain rays of the spectrum, or to reduce the number which passes through them, and in this manner retard the action of such rays on the sensitive surface. Hence it may happen that our zeal outruns our knowledge, and in our endeavor after the best rendition of distant atmospheric effect by adoption of too deep a tint of the yellow we really defeat our intention, prolonging unnecessarily the exposure and entirely obliterating that softness and beauty of distance which painters call atmosphere.

Judgment, therefore, is necessary when the yellow screen is called into requisition.

In the old-time instruction books, one was advised that the best time to take a landscape with distance was immediately after a rain, when the distance, as we might say, had a good wash. The transparency of the air under such conditions made mountain peaks and horizon lines come out with microscopic distinctness, to the great delight of Monsieur Sharpfocus. But we have been taught, and do in part believe that M. Sharpfocus has no lot or portion with the elect in photographic art.

All questions relating to technical matters, processes, working instructions, etc., are referred to competent experts in the particular subject referred to, and the utmost is done to insure reliable and practical answers being given.

Correspondents are requested to first state their case and then number each question; they should also write on one side only of the paper, and enclose correct name and address—not necessarily for publication. No attention will be paid to anonymous communications or those only signed with initials.

We do our best in all cases to publish the replies in our next issue following the receipt of the inquiry, but cannot absolutely guarantee this.

All inquiries should be addressed to THE CAMERA, 606-608 Sansom Street, Philadelphia.

No questions answered by post.

No prints criticised.

VARNISH AND REPAIRS.—Please give formula for blackening lens tubes and the inside of a shutter; also, a paint for repainting bellows.—R. H.

The ordinary liquid waterproof India ink (Higgins') makes an easy method. When the ink has dried, if rubbed with a dry cloth and a little fine emery, it will remove any lustre. For the bellows use the harness dressing made by Frank Miller, New York. The latter can be obtained from any druggist or harness maker.

HARDENING AND FIXING BATH.—Give formula for fixing and hardening bath for use in climate where the water is normally 80 to 90° F.—P. S. B.

Dr. Chas. L. Mitchell, 1016 Cherry street, Philadelphia, prepares a fixing salt suitable for warm climates.

We recommend, before developing, place the plate in

Water 60 parts.

Formalin 1 part

for about three minutes, then rinse well and place in the developer.

Fix in the acid fixing and hardening bath:

A.

Water (7 pints)..... 112 ozs.

Hyposulphite of Soda.... 32 ozs.

B.

Water 32 ozs.

Sulphuric Acid, C. P..... ½ oz.

Sulphite Soda, 3 ozs. dry or 6 ozs. crystals.

Powdered Chrome Alum.. 2 ozs.

Be sure to mix the No. B. solution exactly in given proportions and rotation. During hot weather use the full quantity of No. B with the given quantity of hypo solution (No. A). During the cold season one-half the quantity of No. B is sufficient. Always pour No. B into No. A while stirring well. If these rules are not observed precipitation will take place.

WIDE ANGLE LENSES.—What is the best focal length to employ with a wide angle lens on a 6½ by 8½ plate? Some say 4 inches and others up to 7 inches. Also, is an anastigmat of 6-inch focus as good when both the wide angle and the anastigmat are at the same aperture, say f16? Which lens would be the faster?—H. S. D.

Personally we do not like a wide angle lens, owing to the distortion and the false perspective. We would recommend the 6-inch anastigmat in preference to the wide angle, as it can be used where the other could not. At f16 both lenses would be of equal speed.

FLASH POWDERS, ETC.—1. Will you kindly publish in the columns of your magazine a formula for sensitizing and developing cloth in red? 2. Is it pure magnesium metal that is used in flash powders? Flash sheets are too slow—the subjects generally shut their eyes and appear asleep in the print. 3. Are the several flash powders patented?—C. E. S.

1. There are several preparations on the market that are economical, and it would be better to buy the sensitizing fluid ready for use. "Soline" and "Martin's Silk Solution," made by Burke & James, Chicago, are admirable for the purpose. 2. We do not care to publish flash powder formulae. Magnesium metal forms the greater part of most flash powders. Flash sheets are not slow if you know how to use them. 3. Flash powders are generally prepared by secret formulae.

✽

"Helps to Photographers," the booklet issued by Taylor, Taylor & Hobson, Ltd. (the Cooke Lens people), 1135 Broadway, New York, really should have had the title "Things You Should Know," because the booklet is really an instructive one. A free copy will be sent on making your request for it.

Seed planted 365 times a year, and each planting bringing out a perfect crop, is secured by the users of a Seed plate. It is not the cheapest plate, but the results—. If you've never used a Seed plate it is time to begin doing so.

✽

The last call for our "Old Oaken Bucket" competition is Tuesday, September 10th, at noon. No entries have been sent in up to this writing, and we hope that our readers will take enough interest in this contest and take away the \$35 in cash in prizes. The money is ready, but are you ready? Do not miss it!

✽

The fourth American Photographic Salon, under auspices of the American Federation of Photographic Societies, favored us with the 1907-08 announcement. As entries close on September 15, 1907, at noon, those interested should send to Waldo E. Strayer, Secretary, 1120 Wood street, Wilkesburg, Pa., for full particulars.

✽

Quite a useful novelty has just been placed upon the market by Burke & James, Chicago. The new Ingento Film Holder for developing cut films and film pack permits of handling the film just like a plate and allows for examination during development. They are also excellent for those who prefer tank developing.

✽

A second New York Aristo School of Photography will be held under the auspices of Messrs. George Murphy, Inc., 57 East Ninth street, New York. The entire second floor of the building will be devoted to the school, which will be held September 10, 11 and 12, during the day and evening, and will cover all matters relating to practical photography under the skylight printing and enlarging. A detailed program will be published and sent to the entire trade.

The Racine Camera Club, of Racine, Wis., a branch of the Wisconsin Camera Club, of Milwaukee, Wis., was organized on the 5th of August with a charter list of thirty-seven.

✽

The makers of the Crown Anastigmat f 6.8 have shown us some remarkable work done with one of their lenses. Their catalogue will tell you more about what they claim for it. Crown Optical Company, Clinton avenue, Rochester, N. Y.

✽

The Mirmont Photo Paper Company, Glendale, N. Y., has secured the services of Franklin S. Wood as Philadelphia representative, with headquarters at Alexander Bros., Eleventh below Arch. Mr. Wood formerly had a studio at Newport, R. I.

✽

To get a quart of good paste, and a paste that will stick, for a dime, you should use Jellitac, made by Arthur F. Hoyt, 90 West Broadway, New York. All the principal dealers have it, and you'll be surprised at the general goodness of the paste. It comes in powder form and can be mixed as needed.

✽

A short time ago we called attention to the many useful hints given by the Eastman Kodak Company in our advertising pages, and this month is no exception. Under the caption of "Emergency Cases" they give an excellent lot of advice and practical hints that will be of great service to every photographer.

✽

Dr. Charles L. Mitchell, 1016 Cherry street, Philadelphia, has just perfected a new developer for gaslight papers called "Bromo-Print," which, it is claimed, is non-poisonous and yields prints in a highly satisfactory manner. We have not had an opportunity to try the new developer, but a liberal sample will be sent if you say that THE CAMERA told you to make the request.

The "Royal" route to good photography is a Royal Velox print redeveloped with the Velox Redeveloper. Those soft and delicate gradations and sepia tones you so much admire are generally obtained with the Royal Velox. Have you ever tried it?

✽

The fall bargain hunter should secure a copy of the Bargain List No. 14 of the New York Camera Exchange, 114 Fulton street, New York. Distance makes no difference to them and they can offer you bargains even if you live in far-off places. Write to-day.

✽

Paste was never intended to be kept for five years and then be in perfect condition, but such is the case with an eight-ounce jar of Higgins' Photo Paste that we bought in May, 1902. The jar had been mislaid during a moving and was only recovered a few days ago.

✽

At the Photographers' convention at Dayton the celebrated Angelo Platinum paper had big honors conferred upon it. Twelve out of twenty-five pictures selected for the salon were on Angelo—the nearest competitor had but five. Angelo was "it" all through.

✽

The Advance Studios, Department 77, Woodlawn, Chicago, announce "a superior developing paper designed for prints from which half-tones are to be made, or for prints intended for exhibition purposes." Each month the makers will give a series of talks in our advertising pages that will prove of general interest. They have also the facilities for disposing of prints of various subjects, and it will be well to write for full particulars.

✽

We have tried the new Ansco Film lately and notice quite an improvement in the product over those put out about a year ago. The keeping qualities of the film is now said to be perfect. The Anthony & Scovill Co., Binghamton, N. Y., would like to tell you more about them and the other Ansco products. Cyko paper is another one of their specialties, and the Cyko booklet, which may be had upon request, contains a lot of good information.

No guessing, no fooling, nor any bother getting the correct timing of exposures with a Wynnee Meter. It works perfectly under all conditions. The Infallible Exposure Meter Company, 81 Kean street, Brooklyn, N. Y., will be pleased to send you descriptive matter, or you can examine the meter at your dealer's.

✽

"Uncle Sam" appreciates a good thing, and that's why he has adopted the famous Premo Film Pack in photographing the enlisted men of the U. S. Army. An interesting story is told in the little Premo booklet about Film Pack, which may be had of the Rochester Optical Company, 501 South street, Rochester, N. Y. An outline of this new system of identification cannot fail to be of interest.

It provides for the photographing of every enlisted man in the army, in two positions, a front and side face. These pictures must be absolutely uniform in character, and the problem of securing such pictures in a reasonable time and at a reasonable expense, of thousands of men distributed in various posts throughout the country, presented many difficulties for solution.

Briefly stated, it is to provide suitable apparatus of exactly the same character for each post—these to be in charge of an officer, and as such officer in general would have no previous photographic experience, the apparatus must be so simple and so uniform in construction as to enable each operator to secure precisely the same character of results by adhering to printed instructions.

Boxes of the simplest kind, all exactly alike, were made up. Goerz or Cooke Lenses of the same focus were fitted, and thus each operator, by placing the camera (a special one made by the Folmer & Schwing Co., of Rochester) at a certain measured distance from the chair of the sitter would get pictures of exactly the same focus and of the identical size as every other operator. Reflectors of equal size to be placed in the same relative position were supplied, and to insure that the pictures be made in exactly the same time and under similar conditions of light, daylight was banished and flash light cartridges of exactly the same strength were furnished.

During a talk with C. H. Brown, of Pittsburgh, Pa., he stated that he was devoting his energies towards out-of-doors and home portraiture, using a $3\frac{3}{4}$ by $4\frac{1}{4}$ Graflex camera exclusively. About a dozen dainty 3 by 4 prints were shown, mounted on folders, and he says he is kept busy on work that never brings him less than \$6 a dozen. This is a good hint for others to do likewise.

✽

A full report of the national convention will be found in the new weekly *Bulletin of Photography* for August 21 and 28. As so many good things were said and done, and our space being inadequate to give full data, we refer our readers to the new weekly. By the way, our offer for a combination subscription to the *Bulletin* and *THE CAMERA* in our advertising pages will interest you.

✽

Last month we tried to describe the new 3A Graflex Camera using the ordinary 3A Eastman N. C. Film, but did not go into the detail as thoroughly as we wished to. The new Graflex catalogue fully describes this new addition to the Graflex family, as well as many other goods in the Graflex line. A copy of the catalogue is waiting for you if you say you want one from the Folmer & Schwing Co., Rochester, N. Y.

✽

"Every man should have some hobby, perhaps akin to his business, perhaps wholly different. And no man can know but that his hobby, if he cares for it properly, may be the means of his real success. The amateur photographer may become an artist in his line, the worker with the microscope may make a discovery in chemistry or biology. In any event, leisure, however brief, should be made the time for real recreation—readjustment of the mind and body—mental athletics. And that is what keeps us from growing old before our time—re-creation, re-birth of the soul."

The above extract, from the July number of *The Prism*, is only one of the many good things contained in this little monthly. The publishers, Bausch & Lomb Optical Co., Rochester, N. Y., will be glad to send it to you, free, each month if you make a request on a postal card.

In connection with the Taunton, Mass., annual fair, September 17, 18, 19, 20, there will be an exhibition of photographs in which all amateur photographers are cordially invited to participate. The competition will be in two divisions, salon and general. In the salon there will be classes for portraiture, genre and landscape. In the general classes pictures of all kinds are invited. In each class there will be first, second, third and fourth prizes of \$10, \$5, \$3 and \$2, and a special prize of \$10 for the best collection of six photographs of a series. It is desired to widen the scope of the exhibit, and work will be received from all parts of the country. Entries close September 14. Further information may be had of John Truex, Taunton, Mass.

✽

Binghamton, N. Y., Aug. 15, 1907.

The awards at the recent Dayton National Convention of Photographers and the advent of Professional Cyko have convinced us that the progressive photographer will no longer use collodion printing-out papers, and we have, therefore, decided to discontinue the manufacture and sale of Monarch Collodion Paper on and after September 1st, proximo.

We also beg to state that the new edition of the Cyko Manual, which contains full information regarding developing paper, will be ready for distribution on or about September 15, 1907. We will be pleased to mail you a copy on request.

THE ANTHONY & SCOVILL COMPANY.

✽

The Photo Era, Boston, Mass., announces, in our advertising pages, its fifth annual photo competition, with liberal and interesting prizes. The following named gentlemen have consented to act as judges: Mr. William L. Taylor or Mr. George J. Enneking, artists; Arthur Fairbanks, director of the Museum of Fine Arts, Boston; Rudolf Eickemeyer, photographer; Benedict Herzog, photographer; William Howe Downes, art critic and art editor of the *Boston Transcript*, and Wilfred A. French.

Speaking of the *Photo-Era*, we have authority to deny the statement that the magazine has been sold. A report was circulated to that effect without any foundation whatsoever. We trust that the *Photo-Era* will be in the field for many years to come.

Arrangements have been made to hold at the Albright Art Gallery, some time in September, an exhibition to exemplify the fact that photography rightly should be classed as an art when there is an artist behind the camera. The photographs to be shown will represent the small society known as the Photo-Pictorialists of Buffalo. The exhibit will consist of about sixty frames.

✽

Meeting one of the former students of the Illinois College of Photography (Effingham, Ill.) at the Dayton convention, he stated that within two weeks after his graduation he had secured a studio position, and in the two years he had been in the studio he had had three increases in salary. If you want to know something about the college, write them for catalogue.

✽

Lloyd's 1907 Photographic Encyclopedia, a book of 192 pages, reaches our table this month. About everything a photographer needs is listed and priced, and the book should be in the hands of every photographer. Particular attention is called to the pages devoted to the Thornton-Pickard shutter. Focal-plane and studio workers will be interested in these goods. Andrew J. Lloyd Company, 315 Washington street, Boston, Mass., publishers.

✽

The Empress of Germany is a splendid amateur photographer. She takes her own pictures, develops her plates, makes her own copies, tones them and mounts them, all with her own fair hands. She goes nowhere without her beloved camera. Lately she has collected her best works into an album, which she gives to charitable institutions for raffles and to be sold for beneficent purposes. One hundred copies of these albums are now finished and ready for distribution.

✽

The following article from the Springfield, Mass., *Republican* should prove of interest to our friends, the dealers, and may be a hint for them to do likewise. It strikes us as good business.

The innovation started a month ago by Alfred H. Bemis, manager of the camera department of Forbes & Wallace's store, by which trips afield are taken each Thursday afternoon, has proved very popular, and the

numbers taking these trips from week to week are steadily increasing. The purpose of the trips is to educate people in the art of photography. Free instruction is given to everybody who cares to go by Mr. Bemis, who goes out on each of these trips. Most people don't know how to use a camera, and as soon as they do the fever is soon on. Mr. Bemis has already piloted a party to Forest Park twice and to the Watershops pond once. The party will next go to the Westfield River, getting off the car at the county bridge. This is a delightful territory, and Mr. Bemis already has a number of fine pictures taken there. The party spends about an hour taking pictures and receiving instruction, so that none of the women in the party will be likely to get tired in so short a time.

✽

Sensitizing Drawing Paper

The following is the formula given in *Photo-Sport* for sensitizing drawing paper. It is, in fact, a sort of cheap bromide paper, although it contains no bromide:

Tapicca 20 g.
Water 500 c.c.s.

Allow to soak for twelve hours and add—

Potassium Iodide 10 g.
Potassium Chloride 40 g.
Lemon Juice 10 c.c.s.
Water 500 a.c.s.

Boil till the solution becomes quite clear, and then allow to cool. The paper is coated evenly with this mixture and allowed to dry, in which state it will keep for any length of time, although it may change color. It is sensitized by floating on—

Silver Nitrate 75 g.
Citric Acid 5 g.
Distilled Water 1,000 c.c.s.

for five minutes. The exposure must be sufficiently long to show the outlines of the image. The developer is—

Gallic Acid, Sat. Sol. 250 c.c.s.
Gelatine Solution in
Glacial Acetic Acid... 10 c.c.s.
Water 1,000 c.c.s.

Development is affected by floating the print on this. A rich, warm brown tone is obtained, and as soon as it is intense enough the print should be washed and fixed in a 1.8 hypo solution. The print may be subsequently toned with gold or platinum.—*The Photographic News*.

A Few Convention Notes

At Dayton, during the twenty-seventh annual convention of the Photographers' Association of America, August 6th to 9th, while not so largely attended as some of its predecessors, the one thousand who did attend were amply rewarded.

The entire Steele Educational Building was devoted to the convention for convention work and proved admirable for the purpose. At the entrance door we were met with the usual smiling countenance of Frank R. Barrows, the genial treasurer.

The first exhibit in the hall was that of the Defender Photo Supply Company, of Rochester, under the management of Messrs. Wilmot, Daly, Flake and Palmer. The only thing new shown outside of their celebrated line of developing papers were the new Argol and Monol Developers. These are to take the place of Metol and Amidol respectively and are said to be much lower in price.

Frederick Pohle, of 256 Main St., Buffalo, N. Y., showed an ingenious baby-holder. By the aid of the holder the child is kept perfectly immovable. Owing to the construction of the machine, the holder does not show, and it should prove the desideratum for all those interested in child portraiture.

The Seneca Camera Company, of Rochester, N. Y., under the management of Messrs. Townsend and Weil, extolled the merits of the New City Camera. There are quite a number of Seneca improvements on this new box and it should prove a winner.

The Wollensak Optical Company demonstrated the possibilities of their new Royal Portrait Lens and the Wollensak Studio Shutter. Mr. Weil, the demonstrator, was kept quite busy.

The Hammer Dry Plate Company, of St. Louis, presented the usual Hammer souvenir pin and they "knocked" around and made quite a hit. The exhibit was under charge of "Papa" Hammer and Merrs. C. O. Towles, Sloan and Schaffer.

The Collinear Lens people were well taken care of by Charlie Huesman. He demonstrated the merits of the Heliars, Collinears and Dynars.

Adjoining THE CAMERA and the *Bulletin* exhibit was the famous Aristo School. That was in one of the largest rooms of the building, and demonstrations were made, employing the Aristo Light and the various Aristo products. They had a magnificent exhibit of pictures from some of the most famous workers in the country.

A. M. Collins Manufacturing Company, Philadelphia, with their hustling workers, Messrs. Stone, Hood, Strong and Savage, stated that they did a most excellent business, and showed their new mounts at Dayton for the first time, viz: Daytona, Norfolk, Kaiserin and the Peerless Folder. The line of goods is well worth looking into.

The Century Camera Company, under the charge of Messrs. Favour, Burkhardt, Fincke and Parker, were kept busy explaining many of the new Century novelties, and the Century exhibit also demonstrated the new Studio Graflex outfit. This was one of the greatest things shown in the convention

The New Graflex Studio Camera

and was entered in the manufacturers' competition. Owing to the inability of the judges to settle upon the merits of this new

camera, and another product, the honors were divided and both articles were given equal prizes. As we show an illustration herewith of this new camera, we believe a full description would not be amiss, and we publish same herewith from the description given us by Mr. W. F. Folmer, the inventor.

The ability of composing and focusing upon the subject up to the instant of exposure, focusing with positive lighting, as the mirror intercepting the rays of light reverses the light from negative to positive. For child studies the deceptive lens fitted on the opposite side of camera from focusing hood gives the impression that the photographer is photographing in the line of vision instead of at right angles to this line, which will enable the operator to place a subject in a position in the gallery in line with this dummy lens and enable him to get a child's picture without the subject's knowledge.

A magazine holder carrying twelve plates loaded into septums, or twelve cut films loaded into septums, shifting by a simple pull and push of the dark slide. This magazine is mounted on a revolving turntable, enabling the operator to shift from horizontal to vertical position of plate instantly. Also a revolving diaphragm placed in the focusing hood, permitting of an instantaneous shift from horizontal to vertical field, taking lens concealed in box with the curtain diaphragm working directly in front of the lens, obstructing the superfluous rays of light, enabling the operator to diaphragm the cone of light down equal to the size and shape of plate or film used, and permits superfluous light entering the camera striking the sides of bellows, or interior, and reflecting across the recording plane.

Swinging mirror placed in focusing hood permitting the operator to focus from the top of hood when camera is in a lowered position. This mirror, swinging up and out of the way, permitting focusing from the side when camera is in an elevated position. When camera is in a lowered position for child studies, the focusing being observed from the top of focusing hood, the subject is viewed by reflection on the mirror in a correct position, right side up, as well as with positive lighting.

Adjustments. The camera stand is elevated by pressure on the long lever with the foot and lowered by pressure on the adjoining short lever. The camera may be elevated or lowered to any desired position within the scope of the stand's adjustment.

The locking lever directly to the left of the releasing lever permits the stand to be elevated on its base and locked at any desired point by swinging this lever to the left. It stands 24 inches from the floor and has a rise of 18 inches additional.

The axis of the camera may be depressed or elevated by turning the worm-screw directly under the tilting bed.

The mirror should be set before setting the shutter. The shutter is arranged for time and instantaneous work. The range of instantaneous exposures will vary from 1-200 to 1-5 of a second. Base is fitted with ball casters.

The McIntyre Photo Printer and Machine Company, Grand Rapids, Mich, showed their new photo printing machine, which is quite a marked improvement over the one shown at Indianapolis, and the new machine created quite an interest. Demonstrations were made on the new Halo paper of the Haloid Company, 7 Commercial street, Rochester, N. Y. Speaking of the Haloid people, they have made a great success in the past few years, and are just about moving into a factory in which their output will be increased over tenfold.

The Aristo exhibit was unusually attractive and took up quite a large space with an exhibit of from fully 400 to 500 prints. It was a veritable salon itself.

Burke & James, Chicago, under the care of Mr. Mackness, demonstrated the new Ingento Automatic Developing Tank, the new Ingento Film Holder for developing cut films and the film pack and many other Burke & James specialties. These are so numerous that we think it best for you to write for catalogue from the B. & J. people as to description of their specialties.

Milton Waide, 32 Union Square, New York, attracted much attention with his simplified method of developing. He has a scheme in which the photographer can use one developing solution and make it do for both plates and paper. He gave a practical demonstration by having both the negatives

and the resulting prints on exhibition. He has an interesting proposition, and would be glad to send particulars upon request.

Tony Babb, of the *St. Louis and Canadian Photographer*, extolled the merits of his new Studio Register and Account System. This is something that any photographer who desires up-to-date methods can employ to a good advantage, more particularly if he followed the lecture on "System" which was given by Mr. Harris at the Friday morning session. However, Mr. Babb will be very glad to give you full particulars by addressing him at 911 North Sixth street, St. Louis, Mo.

Bausch & Lomb Optical Company, Rochester, N. Y., had an extremely interesting exhibit under the care of Messrs. Jarrell, Lawrence and Epps. They showed their new Unar working at $f/4.5$ with improved mountings. They also showed the new Bausch & Lomb-Zeiss Tessar $f/4.5$ portrait lens. By the way, these lenses were used at the demonstration in the Aristo School. The B. & L. people want you to know more about their lenses, and if you will send them a request, they'll be glad to send you their new monthly magazine, entitled *Prism*, free of charge. The exhibit contained a most excellent wall display of pictures made with the usual B. & L. product.

The Nepera Division Eastman Kodak Company, demonstrated, under the able management of Messrs. Jack Cummings, Young, Smith, Miles and Rabineau, the new Nepera developing paper on three different surfaces. This paper will not be on the market until September 15, but if you want to try it prior to that date, send to the makers for a sample. They gave out a very useful souvenir in the shape of a photographic thermometer, which has proven quite a good thing.

C. P. Goerz American Optical Co., New York, demonstrated, by the aid of the Farquhar Electric Lamp, the possibilities of the new portrait Celor Lenses. Manager L. J. R. Holst was ably assisted by Oscar Chouinard and Frank Benson. The Goerz exhibit was unusually attractive, and the veranda overlooking the Miami River was the rendezvous for all those who were tired and loved lemonade. The famous Goerz Cup has been won this year for the third

time by Jack Garo, of Boston, and now becomes his property.

The Taprell, Loomis Co., Chicago, had a most elegant display in one of the larger rooms of the convention building and dispensed music and lemonade quite freely. This matter of giving out lemonade at a convention was really a life-saver to many, because facilities for drinking water are so seldom provided. Many new style mounts were shown which clearly proves that for variety and design the T. L. Co. mounts are those which will bring money to the studio. Amongst the specialties were the Innovation, the Classic, the Pompeii, the Golf, the Dana, the Mantell and the St. Regis stocks. The new line covers the wants of all photographers, both in price and quality.

The Berlin Aniline Works, New York, distributed samples of the "Agfa" Pyro, with Mr. F. Harry Hall in attendance.

One of the greatest hits of the convention was the New Towles-Schofield Smokeless Automatic Flash Machine made by Towles Bros., 1107 F St., N. W., Washington, D. C. The machine is constructed on entirely different principles from anything else that has ever been upon the market. It is smoke-consuming, and by the use of small cartridges, containing fifteen grains of powder each, it is capable of making forty exposures without reloading. We show an example of the work on another page in the shape of a portrait of Mr. W. H. Lively (the author of the new book, "Lively's Method of Lightings"), which is a fair example of its work. Other negatives up to 11x14 inches were made with fifteen grains of the powder with this machine and they yielded magnificent results. In the manufacturers' test the judges were unable to make a decision between the Towles Lamp and the new Graflex Studio Camera, so they divided the honors between the Graflex and the Towles Lamp. We understand that the price of the lamp will be \$40.00.

A. H. Uhrig, Gallipolis, Ohio, showed his improved steel die and embossing press and did quite a business. By the way, this is one of the most economical embossing presses that a photographer could use, offering facilities for all sizes of mounts, and sold at a low price—\$25.00.

Anthony & Scovill Co. were represented by Messrs. Stanbury, Topliff, Lamoutte, Cross, Macon and Bolwell, and we believe this is the only convention we have ever attended that our old friend Ben Pelgriff was not on hand. A general line of the Anthony-Scovill goods were shown, as well as the new Cyko Paper made in four different surfaces and for professional uses only. The improved Ansco film was much in evidence, and it was stated that the new film has much better keeping qualities than the Ansco film that has been on the market in the past.

Of course, no convention would be complete without "Papa" and "Mamma" Cramer, and both were much in evidence, smiling and happy as usual. The Cramer people were represented by Messrs. Hart, Dorella, Nichols, Carrick and Sheets. One of the most novel souvenirs of the convention was handed out freely by the Cramer people, consisting of various colored feathers with a thistle glued to the end. About the only time any of the visitors ever had wings in their lives was when they were ornamented with the Cramer souvenirs. The twentieth edition of the Cramer Manual was also distributed and much sought after. The new book contains many new formulae for tank developing.

Curtis & Cameron, Boston, were on the third floor, and owing to the isolated position of their exhibit it was not seen by as many as it should. However, they will be at the New England convention, and will be glad to talk to you there about Harcourt Sepia.

Charley Lovell, the old war-horse, was around again and has a scheme that he wants you to know about. He claims he can save you a pot of money. Write him at 48 Summer St., Boston, for particulars.

Alexander Bros. Co., Pittsburg, Pa., demonstrated a new swivel point trimmer.

The M. A. Seed Dry Plate Co. were hospitable and gave out little dinner plates as an invitation to come out on the verandah, enjoy the coolest spot in Dayton and be refreshed with lemonade.

Rough & Caldwell Co., New York, had a big display of backgrounds and many new ideas were shown in the line.

The Eastman Kodak Co. displayed a line of pure photographic chemicals in cartons, by which the photographer is assured of having the right developing agents ready for instant use, and put up according to fully tested formula.

George Murphy, Inc., New York, Mr. Lavender in charge, showed the Percy King Light Controller, Eagle Flash Lamp, Eagle Vignetter, Ross Lenses and a full line of studio equipment.

The Dresden Photo Paper Co., 245 E. 39th St., Chicago, had an interesting exhibit of their papers, Dresden Buff, Sepia and Platitone—silver printing out papers coated on stock similar to platinums. The paper is easy to handle, and was explained to the visitor by Mr. Langdon, the president of the company.

Angelo Platinum Paper had a Salon of its own and some beautiful work was hung, showing the possibilities of Angelo paper. Of course, Joe Di Nunzio was on hand with his crony, "John Mora." Di Nunzio and "Mora" are inseparable. Messrs. Marshall and Fanning distributed fans to the perspiring visitors.

Ozobrome, the simple Carbon Printing process without direct light and the usual carbon mussiness, was demonstrated by Mr. Carkhuff, of the Eastman Kodak Co., who have been appointed American agents for Ozobrome. The new process is so simple that it is going to take with all photographers. A brief description is: Make a bromide or a Velox print by contact from a negative, or make an enlargement, squeegee the Velox print to the prepared Ozobrome tissue, play with it in water 110° for about five minutes, then immerse in a ferricyanide and hypo bath for five more minutes, wash print for a few minutes and you have a print better than anything you have made before. The Ozobrome will be on the market about September 15th, and can be had of all dealers.

Trier & Bergfeld, New York, had their space under charge of Fred Godfrey. They made no demonstrations.

The German exhibit on the third floor was very attractive, and representative of the best workers in Germany, France and England.

Making Opportunity Knock at the Door

By Harvey S. Lewis

Two years before I was graduated from the public school, I had very definite ideas as to my future. I wanted to be an artist. I wanted to make such pictures as were used by newspapers, magazines and other publications for educational purposes. My school training taught me very little regarding art. In fact, I did not have the least idea as to how an ordinary illustration for a publication was made. This did not discourage me. I would learn.

My first move was to become interested in photography. My first camera I made myself. My brother had a good one, but I wanted to know all about a camera. Therefore I made one from cigar-box wood, using a toy stereopticon lens. I delved into the mysteries of the chemicals, mixing those that I used and making as much of the material I used as I possibly could. This all happened while I was at school.

After being graduated, I wrote to a small photographic gallery, applying for a position. I did not wait for an opportunity. I created one. This gallery did not advertise for a helper, for it did not do enough business to keep the proprietor busy. This was the reason why I selected it as my training-school. I was going to start at the bottom in a place where I would not be rushed. I wrote the letter in the evening, and the next morning, before the proprietor could have an opportunity of answering, or before he had time to forget my letter, I called upon him.

Although the photographer did not really need my services, I secured the position at five dollars a week. This was small pay, but I was receiving an education. At the end of three months, I wrote to a larger gallery (which did not advertise for help), stating that I had experience in gallery work and asking for a job. I secured the position at ten dollars a week. In this gallery, which did a higher class of work, I had occasion to do some hand-work. This brought me in touch with some pen-and-ink artists. Through them I learned something regarding the various branches of commercial work.

Feeling satisfied with my photographic education, I next planned to secure some position whereby I could become associated with such artists as did newspaper and magazine illustrating. At last I heard of a school in New York where they taught this kind of work, and where many of the best artists spent their time. I applied for a position, although I knew that no position was advertised. They offered me ten dollars to do office work and assist in what art work I could.

By chance I had two "opportunities." One was to go to another photograph gallery at an increased salary (perhaps fifteen or eighteen dollars) or to go to the art school at ten. It was not the money I wanted so much as the education. Accordingly I went to the school.

At the end of three months I was made one of the assistant instructors because I had specialized in my work. Two months later I applied to a large advertising firm (again writing and then calling), asking for a position to illustrate advertisements. I was given the position, although they did not advertise for an artist. I showed them *how* I could be of benefit to them. I created my "opportunity."

While in the latter position I found that I did not thoroughly understand the newspaper end of the art work, and so I secured a position on a Brooklyn daily paper, where I was able to do both newspaper photography and pen-and-ink illustrating. I learned also the engraving end of the work as well as the "news" end. After one year's work as a newspaper photographer and artist, I thought it time to do something of my own creation. Accordingly I assisted in founding a magazine where I had charge of the art department and assisted in the printing and engraving. With this successful experience, I secured another excellent position with a large advertising and publishing firm, where I had charge of all the art work. In this position I allowed my ambitions to have full sway, and have had the satisfaction of seeing my dreams realized.—*The Circle*.

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More than we use is more than we want.

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Focal Plane Practicalities

By C. H. Claudy



APPARENTLY a considerable number of new recruits have been lately added to the ranks of photographers who have taken up focal plane shutter work. I get several letters a week from interested parties, retailing this and that difficulty and asking for additional information, and the Editor gets a whole lot of cries for help. It is, perhaps, not to be wondered at that the new device—new to the user—brings apparently unsolvable problems with it, but some of the difficulties encountered are entirely unnecessary if only a little preparation for the work be made in advance.

One of the nuts which the new focal plane owner seems to find difficulty in cracking is, when to use a small slit and low tension, and when to use a large slit with a high tension, to obtain the same exposure. This is the easiest thing in the world to answer. If, as theory would have it, a two-inch slit at a certain speed gave the same identical exposure as a one-inch slit at half the speed, there would be no choice as to which to use for any set of conditions to which the resulting shutter speed is suitable. As a matter of fact, however, the tensions and the various speeds they give to the slit are variable in various instruments, and vary in each instrument according to temperature and age of the spring and the care which is taken of it. Consequently, the fixed factor on which dependence can be placed is the size of the slit. At a given curtain speed a two-inch slit will admit twice as much light as a one-inch slit, and variations so made are more reliable than variations made with changing tension speeds. This applies to those types of focal plane shutters where the curtain varies in length little, if at all. The Graflex shutter, with its several slits of fixed sizes, cannot have its speeds computed quite so simply. The three-quarter inch slit on this shutter gives an exposure more than twice that which is obtained from the three-eighths

of an inch slit, because the spring is wound tighter in the latter case than in the former.

Therefore, in answering the original question, it would seem wise to advise that each owner test his shutter for himself, on a speed tester or some object moving at a constant speed, and find out whether his tension speeds do what the speed card says they will. The Graflex shutters are tested, and approximate closely the speeds for which the various tensions and openings are rated, but not even a Graflex, with all the care taken in the making, is proof against neglect—leaving the tension spring wound when not in use. I make no invidious comparison between this shutter and others; I have no doubt the foreign shutters are carefully tested and accurate also.

When there is doubt as to the result of tension and aperture in making up an exposure, give your preference to the smaller aperture and the lower tension when there is movement to be stopped; when there is no movement, give your preference to the larger aperture and the higher tension. The reasons are these: If there is doubt about a spring it is almost universally that it isn't strong enough; I never heard of a spring that grew stronger with age and use. Therefore, if your spring may be weak, don't get your high speeds by it until you have exhausted the small slit limit. On the other hand, when there is no movement to stop, give preference to the arrangement which *may* give you the fullest exposure, since focal plane exposures are seldom too full and may easily be too scant.

Unhappily, in the endeavor to popularize this form of apparatus in this country, many writers, myself among the number, have talked much of the wonders which a focal plane shutter can accomplish. But these wonders require both knowledge and conditions—a focal plane shutter, just because it is what it is, won't work a miracle. You can't make snapshots with it in the dark, nor one-thousandth of a second exposures in the woods on a dark day.

Some of my correspondents tell me that with the largest slit and the slowest tension they get much-undertimed negatives. One correspondent sent me one of these. I haven't heard from him since I replied, but I guess I made him sit up a bit. His negative was overexposed and very badly underdeveloped, and he, apparently, didn't know the difference.

Now, there has been a great deal of talk about the proper development for focal plane exposures and the skill, etc., that must be employed to "bring up" the results. It isn't so. There is nothing better than a tank for focal plane exposures, and any one who can read can operate a tank. I recently had the pleasure of a long conversation with W. F. Folmer, of the Folmer & Schwing Company, and he told me how he converted a very prominent war correspondent to the use of the tank. It seemed the correspondent, whom I will call X—, had been to a race track and made a lot of high-speed pictures in the rain. He was in two minds about developing them or throwing them away undeveloped, when Mr. Folmer arrived. Learning of the plates, Mr. Folmer insisted in trying tank development, an idea X—

had never believed in. He gave his consent, however, to Mr. Folmer "spoiling those spoiled plates," and Mr. Folmer proceeded to soak them nearly an hour in a solution so dilute that X—— gave him the horse-laugh. Finally, although Mr. Folmer was not ready, X—— insisted on seeing how much they were "spoiled." Mr. Folmer laughed himself at the recollection. "I waited for X——," he said, "to look for himself. I didn't want to go in the darkroom—I had an idea what was going to happen. When I heard X—— yelling like a Comanche Indian. I walked in and found him in transports. 'Do you mean to tell me I can get things like these all the time?' he yelled. 'Say, where do you buy tanks?' And that was all there was to it."

At the same time, there are modifications of developer to be made, even in a tank, depending on the plate used and the character of subject. If the subject is in itself very contrasty and the exposure quick, a fast plate is to be used and a normal developer. If the subject is flat, however, a slower plate should be used and a developer rich in carbonate should be employed. Of course, I know that you can't carry all kinds of plates with you when you go out to work, but sometimes you can know beforehand what you are going to do, and then you can prepare in advance. As a general rule, fast plates should be employed. They give less contrast than the slower kinds, and so offset in a measure the contrast afforded by underexposure. No restrainer should be used in the developer, as the delicate detail in the shadow is thus liable to be lost. Remember, the light impress has been feeble and light, and every advantage must be taken of it. Development must be so arranged that it makes the most of the little light impress, and no system is so well calculated to do this as tank development. But no one formula is going to work to the very best advantage on all plates. So it seems advisable to take the plate manufacturer's formula and dilute it to tank strength—from half to a whole grain of pyro per ounce of solution—and try it that way. And then, if the results are not satisfactory, increase the carbonate for the fast exposures.

Of course, the troubles of not getting results with a focal plane shutter may be due to a lot of things. One man, who came to me personally, brought his camera with him and left it. I gave it back to him, and on trying it he pronounced me a wizard. The wizardry I worked was to carefully and fully clean his dirty, dusty, greasy lens with an old handkerchief, lens paper, and minute quantities of alcohol and water. He had been blaming the shutter. Another case I heard of, although I did not see it personally, was of a man who could get fine results when he worked his shutter fast, and none when he worked it slowly. This was a poser for the man who had to work it out. The trouble was finally found to be in the shutter. The small slit did not alter when the slit-altering mechanism was used. It was out of order. So he had small slits *all* the time. When he thought it was a big slit he was, of course, doing work in a poor light—and got nothing. When he set it for a quick light, of course, the small slit did the work.

In nine cases out of ten, however, the trouble lies with either under or

improper development, or, of course, the attempting of the impossible. One frequent source of trouble is the taking of snapshots of objects very close to the camera at comparatively high speeds. If you take a head and bust portrait under the shade of a tree out-of-doors with a stand camera, what time do you give it? Half a second? Whole second? Why, then, try to do the same thing with a focal plane shutter at one-one-hundredth of a second? There is no magic in the shutter, you know. But try one-tenth or one-fifth of a second, and perhaps the results will surprise you.

I would be less sure of my ground in condemning the development of those who tell me of focal plane shutter troubles, if I had had less experience. But I have owned five focal plane shutter cameras—I have three now—and used a number of others (those I had on trial and those I have tested for friends), and I have never had any trouble in getting the results I went after that I could not figure out to be due entirely to my own mistakes in judgment of the proper exposure to give. Consequently, when some one comes to me with a tale of woe of his big slit and slow tension and $f/6.3$ lens giving underexposed negatives in bright sunlight in the middle of the day, I know that either he is dreaming, or his camera is all out of whack, or else his development is off—and I have usually found that the result of the first tank of negatives removed all further cause for letter-writing.

Of course, all troubles cannot be diagnosed at long range, and there have been cases where the shutter itself was wrong, as noted above, or where a leaky bellows or dirty lens was at fault. Try the services of some local expert, if you think your troubles are caused by the camera. But if your instrument is in working order, and you don't overdo your speed, and develop with the right pyro solution in a tank, you cannot any more fail of success than a duck can keep from swimming.



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"SUNSET"

HOWARD HEIMERDINGER

THE CAMERA Silver Medal
Competition No. 101

Making Prints in Chromate of Silver

By A. J. Jarman



CHROMATE of silver as a chemical preparation is not sensitive to light under ordinary conditions; in fact, this salt of silver is regarded as one of the permanent salts, yet photographs can be produced by this chemical by a process of substitution. One of the simplest of methods is to make up a mixture of sulphate of nickel and potassium bichromate in the following way: Prepare a small quantity of a saturated solution of potassium bichromate, then dissolve in one ounce of distilled water sixty grains of sulphate of nickel; add to this half a fluidounce of the saturated bichromate solution; brush some of this solution upon a sheet of pure white paper and dry it in a darkened room, the temperature of which should be not lower than 75 degrees Fahrenheit. The coating of the paper must be carried out under an orange-colored light to be sure of no light action of an active character. When dry, the paper can be cut to the size required, placed upon a negative and exposed to daylight, sunlight if possible. The time of exposure must be judged by the action on the paper, which at first will be brown in color. The action must go on until a bleaching sets in; the paper can then be removed from the printing frame and fully developed by passing the paper quickly over the surface of a weak solution of nitrate of silver. Almost instantly a very fine positive in chromate of silver will be the result. The picture must be thoroughly washed in many changes of water to get rid of the traces of free nitrate of silver.

The next method differs very materially from the above, at the same time produces prints in a beautiful red color, and, judging from prints that have been made nine years ago, they can be regarded as permanent.

Make some prints upon a collodion surface paper—aristo platino answers well. Print them direct, sunlight if possible. This is for rapidity. The depth of printing must be carried so far until the image appears to be bronzed in entirely; if the image has become lost and the paper presents only a black mass, that will not affect the result. These prints must be washed thoroughly in several changes of water, and then placed in the following solution, made as follows:

| | | |
|---|----|-------------|
| Hyposulphite of soda..... | 1 | ounce. |
| Water | 16 | ounces. |
| Saturated solution of bichromate of potassium.. | ½ | fluidounce. |

to which add a dram or two of citric acid solution, sixty grains to the ounce of water. Place the prints into this, turn them over quickly and keep them in motion. In a very few seconds the prints will lighten up considerably and the color changes to a brick red; all the bronzing effect disappears. The action must be continued until all mottled effect disappears upon holding the print up to the light. All that is necessary, then, is to wash the prints well in either running water or give them about eight changes in clean water, allowing them to soak for a few minutes between each change. If the action becomes tardy the addition of a dram or two of the bichromate solution and the same amount of citric acid solution will aid rapidly in securing the result.

Only a few prints can be treated at a time, when the solution must be thrown away and a fresh one made up; the material being very cheap one can afford to do this. The results obtained by this particular plan are such that are not acquired by any other means. The whites of the print are bright and pure. In many cases these prints are easily mistaken for carbon prints, the color much resembles that between a warm sepia and red chalk, and when they are mounted upon a dark-colored mount, either a dark-green or black, the effect is most striking. Before attempting to make up a large number of these prints it will be a good plan to prepare a few and make the trials that are always necessary when attempting a new process. Care must be taken not to allow any crystals of common salt to come into contact with either the prints or the wash waters, especially before they are placed in the bichromate hypo solution, because this will result in a crop of white specks all over the print. With ordinary care the production of prints in chromate of silver by the above method can be carried out with as much certainty as by any of the usual toning processes.

The reason for recommending a collodion paper for the purpose is because this class of paper has always given the best results, although prints upon plain paper have been made and treated in the same manner, but the bichromate hypo solution does not give such good results as when the collodion surface papers are used. The object of printing very deep into the bronzing stage is to obtain an image composed partly of metallic silver, so that the chromic acid of the bichromate of potassium can attack this metal and so convert it into the chromate, and partly by the process of substitution the action is aided considerably by the use of the citric acid; in fact, the converting action does not take place until this acid has been added.



Outdoor Groups

By Felix Raymer



WHEN we speak of making groups outdoors, the first question to arise in the minds of nine-tenths of THE CAMERA readers, I am sure, is: "How can the light be so controlled outdoors that a good group can be made?" This question arises from a preconceived idea of what a group should be, and this idea comes from what we have heard and read about making certain effects of light and shade in a studio. In other words, we do not realize the fact that studio work is entirely different from outdoor work; but one can be as good in its way as the other. Who is to say the studio groups are better and more artistic than the outdoor groups, or *vice versa*? The operator must know that there are many different *effects* in lighting. He must know what these effects are and be able to step from one class of work into another at a moment's notice. If he cannot do such a thing, it is not the fault of any one or any thing but himself. If we were



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RAYMER

to make all of our negatives of the same effect, or the same class, we would narrow our photographic horizon down to a very small circle.

One of the most important considerations in making outdoor groups, and, in fact, any class of portraiture outdoors, is the securing of flesh values. This is, of course, of the utmost importance in any branch of portrait photography; but is, of course, a more difficult matter outdoors, owing to there being so much light and it coming from all directions. The grouping or posing of a group can, of course, be along the same lines followed by the operator under the skylight. We will first devote a little attention to the securing of flesh. As all know who have tried making groups outdoors, if the subjects are posed in such a way that the light falls full from the front the result shows the faces to be of a marble-like appearance. That is certainly not flesh. On the other hand, if the light is allowed to fall on one side of the face, and the other held in shadow, it shows too great a contrast, giving the appearance of one side of the face being of marble and the other too black to show flesh values. Neither can this be flesh and blood. So the operator must select a place for his group that makes it possible for him to secure the flesh value. Now refer to the illustration shown with this article. It will be seen there are trees in the background. These trees were used as screens—the subjects being placed so the light fell on them from one side slightly stronger than from the other. As a matter of fact, the sun was almost directly behind the subjects, but by placing the figures nearer one clump of trees than the other, it toned down that side of the faces so that they became the shadow side. The modeling of the faces is well preserved. In other words, they show *roundness, character, action, and likeness*—all that any portrait can show. But the modeling may be *different* from that secured under a skylight.

Now a word about the posing. In all well-organized studios there prevails an idea that a group should be so placed that it conforms to our ideas of what we call "pyramidal formation." This is to some extent true, but nearly all operators try to have the apex of the pyramid in the *centre* of the group: this I hardly see necessary. I call attention to the lower figures and the gradual rise until the apex of the group is reached in your Uncle Hiram's (that's me; take a good look, for "it's" good for sore eyes), figure. It will be noticed that the highest point is off to one side of the picture. I have objected to the stereotyped mode of grouping, where the highest figure is in the centre of the picture, on the grounds that to "get into" the group the observer has to "go up one side and down the other" to see all there is in it. This is, however, a matter of taste, possibly, and one should use his own judgment. The lens used was Goerz, Series III, No. 6. Stopped $f/11$. Exposure, one second. Cramer Banner X plate. Aristo print.



Photographic Post Cards

By Bertha Partridge

NEARLY all amateur photographers are interested in the photographic post card, but few, however, use any method except printing on mat surface "gaslight" or developing cards.

Variety may be given your work in several ways, and "something new" will delight your friends and relatives who receive your post cards.

You may find in the following suggestions some that may be of value to you or may perhaps suggest other ideas to you.

The selection of a card has much to do with its success. Select cards which will give as nearly as possible the result aimed at. Where detail is required use glossy surface developing cards and squeegee to a ferrotype plate to give a highly polished surface. If pictures are harsh in black and white, try toning to sepia by some of the popular methods. The simplest method, "hypo and alum," gives good results if the cards are printed deeper than usual. Bromide cards also give soft, well-graded results, with negatives showing extreme contrasts.

For marine views use some ferroprussiate cards, as marines are very attractive on these cards.

Very thin negatives with fine detail give good results on a printing-out post card. White borders may be obtained by buying masks of opaque paper in post-card size. Masks for 4 by 5 size, also with a slip of paper pasted on one end to make them long enough, are useful if you use 4 by 5 negatives. Fancy borders may be made on blue print or other cards in the following manner with film negatives: Trim a small film negative to perhaps $2\frac{1}{2}$ by $3\frac{1}{2}$ inches and paste the corners with transparent paste, made by dissolving a bit of gelatine in water, to the clean glass fitting your printing frame. Then paste tiny "feathery" leaves, and perhaps a small four-leaved clover, about the film, arranging them as artistically as you can. Print in the ordinary way, and you have a border of white flowers on a dark ground. If you wish you can cover the picture and sundown the white-making light flowers on the dark ground. If the card is put on and printed without the leaves a plain dark border will result.

Complete outfits for tinting pictures are now sold at reasonable prices, and the work is quite simple. The study of a few high-class printed cards of the colored variety will help you in giving you an idea of colors. Landscapes should be attempted first, and remember to err on the side of "dull" tinting rather than too gorgeous results. Use small camel's-hair brushes for applying the water colors. A card tinted by an amateur shows a bird's nest on a branch of an apple tree in bloom. This was an "easy" card to tint and the effect was most pleasing.

Folders may be made for your post cards by cutting some of the leaves from an album with small leaves for one post card to a page. Trim the leaves and connect with a narrow strip of passepartout binding. Five or six leaves may be used, and when filled with post cards and hung up they show to ad-

vantage. One amateur frames his post cards in a 20 by 24 inch frame, arranging about a dozen or fifteen in an artistic manner and changing from time to time as he makes new views. Another pins his cards up with push pins, covering one side of his room, using his own cards and others. Many photographers are also post-card collectors. If one has plenty of time, photographic cards may be used for exchange, and if not, one may have 250 or 500 cards printed from some interesting negative.

Half-tone cards are not so desirable as collotype cards, and the cost for collotype is not much more, but if well done they are far more desirable.



Developing in Comfort

By W. Thomas



SHORT time ago a friend showed me round his new house, and, after inspecting it from top to bottom, conducted me to his special pride, a small, compact, cupboard-like apartment, perhaps four or five feet square. This was his darkroom, and the ingenuity displayed in the fitting up was truly wonderful. Some day, perhaps before the calendar says summer has passed, we may be treated to a spell of hot weather, and when that happens, I could not help wondering, while looking into his little, doll-like, dark corner, what frame of mind one would be in, after half an hour inside it—no—if it really became necessary to work under such cramped conditions, photography would lose its attractions to one dabbler in it, for I prefer to do it under conditions of some comfort, or not at all.

There must be, indeed one knows there are, thousands of amateurs who work under difficult conditions with regard to a darkroom. To many such it should not be a difficult matter to have, for a small outlay, quite a comfortable room in which to carry out such operations as changing plates, developing, and so forth, all that is needed being to fit, or get some carpenter to fit, to the window, or windows, opaque blind or blinds, according to the number of windows. A groove is fitted down each side for the blind to slide in, and another across the bottom receives it when let fully down. In this way all danger of light getting in is done away with, and assuming the material composing the blind is really opaque, then you have a perfectly dark room. Just think what this means. There is no necessity to disturb the settings of the apartment; no moving of furniture; and, what is more, no having to get out and fix up covered frames to block up windows; no pinning or nailing up brown paper and other similar makeshifts. Instead, you just draw down a blind, and there is your room ready instantly; and just as instantaneously, when work is finished, the room is transformed back to its ordinary condition by the mere act of drawing up the dark blind again.

Yes, all the above sounds nice and very simple, but what about the household authorities allowing a black, ugly blind being fixed up? They would object to any disfigurement. Well, they might, and quite right too, if the room was one

occupied and used for ordinary household purposes; but there need be no disfigurement. Indeed, except when the dark blind is drawn down and the room darkened, no one coming in would know any such arrangements had been fixed, for the ordinary household blind is fitted in quite the usual way, and lace curtains occupy their ordinary position; nor are they in any way disturbed when you suddenly plunge the room into absolute blackness, for your photographic blind slips down behind the others, and, running in its own grooves, in noway interferes with other fittings.

To those who prefer using daylight filtered through red fabric, then the blind would be composed of two thicknesses of ruby material specially sold for the purpose. This answers splendidly. You have a big, airy room flooded with red or orange light, according to color of blind material. It is always ready at a moment's notice, and, being a permanent fixture, there is no fag in preparing things before work can be undertaken, and, what to me would be equally important, no bothering to put curtains and so on straight again afterwards.

When using the opaque blind there is the question of lamps to consider. This, however, is chiefly a matter of choice or circumstances. In my own practice, electric light being available, it is used for developing, slide-making, copying at night, and also for making enlarged positives, negatives, and large bromide prints. It is a delightful light to handle. The mere act of pressing

one switch off and another on, giving red and white light, renders it a treat to work with; but other illuminants answer just as well, and are used as circumstances render necessary.

This must vary in accordance with kind of blinds, number of them, and whether they are fitted by a carpenter or done by yourself.

My own room has two windows, measuring roughly (at a guess) five feet by three feet each, and the total cost of material, making and fitting the two blinds, was \$7.50.

I don't know where the carpenter's profit came in at that price, but he stated his own figure, and appeared satisfied when paid; a happy state of mind, and one I certainly am in every time the room has to be used for such photographic purposes as require a darkened apartment.

So much for the conditions under which the work of developing plates may be done. To complete the arrangements it only needs a light-tight tank, to be filled with some developer, kind immaterial; then, having darkened the room and lit the lamp, a dozen plates may be slipped into the tank, covered up, and left to themselves for sufficient time to work out their own salvation. Meanwhile, blinds have been drawn up and other work proceeded with.

This modern way of doing darkroom work is an immense saving of time, and, providing the exposures given have been reasonable ones, there seems to be no difference in results produced; that is, the ratio of successful negatives seems quite as high when doing them by the dozen as when developing each plate singly, and brooding over it during its growth from a creamy white film into the black, strong image of a fully developed negative. Given right exposures, either method of developing will produce good negatives, but with a vast saving of time in favor of the tank system.

Kind of Tank.—There is a matter upon which one is entitled to utter a grumble.

When handling supersensitive color plates, naturally it is done in very dull light, and why the grooves into which each plate is placed, inside the tank—why these grooves are made fixtures is a puzzle, the solution of which is beyond my power of finding, for it serves no good purpose, and certainly gives rise to considerable difficulty in taking out the plates for examination. What is needed is for the rack to be removable, so that the plates may be placed in it; and when all there, the rack is simply dropped gently down into the tank of developer, covered, and left until such times as examination is needed. Then one just lifts out the rack, looks at all or any particular plate, without having a struggle to reach them, as when pulling them direct from out of the tank, and often in doing so damaging the wet, tender films. It is no fancy, overdrawn picture, as any one will know who has tried to pick up a plate from a tank filled with its full complement.

Recently, while in Leeds, a copper developing tank was shown me. Having since used one pretty extensively, there is nothing but praise to record, for its working is simple—a tank, *with removable rack*; a lid, to shut out light when once the plates have been placed in position for development. It is simplicity itself, and so also is the examining of partly finished plates, for there is nothing further to do than lift out the rack, and there are the plates conveniently to hand. No digging into a close, packed tank, but just lifting out of the rack any particular plate without loss of time, and without any clumsy struggles to get hold of it. It is the best-arranged tank for developing it has been my lot to come across so far. It renders the manipulation of a large batch of exposed plates quite a simple and speedy matter.—*The Amateur Photographer*.

[Burke & James, Chicago, and Geo. Murphy, Inc., 57 East Ninth street, New York, make such a tank as described above.—ED. CAMERA.]



Superstition and Photography



HIS from India: "The curious fate of a photograph taken in the mills during the late factory commission comes from Bombay. It contained a party of three Hindoo women who quite understood the taking of a picture, and came with alacrity, dressed in their best; they were taken in a group with several Mahometan men. Alas! The canons of decorum were broken. When the photograph appeared the lurking objections of caste took concrete shape. The shameless ones were boycotted, no one would go near them or touch them, other women would not allow them to go to the same wells for water, stall holders and shops refused their wares. Finally the injured women petitioned one of the agents of the mill to apply to the government for the return of the negative. This was done; the offending negative was handed to the husbands of the women and was immediately dashed in pieces."

Silhouette Photography

By Ernest W. Jackson

PORTRAITS in silhouette most photographers are acquainted with; the writer, however, believes there are undeveloped possibilities in taking flowers, fruits and other objects with graceful and striking outlines, in the silhouette style. Flowers and plants often please us as much by their forms as by their color, and many charming decorative effects may be obtained with the aid of simple material that is accessible to most photographers, if the suggestions about to be described are followed.

Silhouette photographs may be made either by daylight or artificial light (magnesium ribbon). The examples accompanying these notes were all made by daylight, and perhaps this is the best method to adopt. The procedure is certainly simple, and it involves no exceptional outlay in the matter of apparatus. An old packing case, such as an empty sugar box, is obtained, and the top and bottom are knocked out. The box is then laid on its side on a table placed near a window, so as to get a good amount of strong light. A piece of white tissue-paper is tacked over the end of the box nearest the window, the camera being placed at the opposite end. The apparatus is now complete and ready for use. The objects to be photographed should usually be placed about half way inside the box, but if a slight amount of gray tone is desired in the picture the objects may be placed closer to the tissue-paper background, or a slightly longer exposure will give the same result. A large black cloth should be thrown over the box, extending to the front part of the camera; this is to prevent any light entering the lens which does not first come through the

Fig. 2

tissue-paper screen. Strictly speaking, I suppose silhouette photographs should not show any half-tone whatever, but the writer thinks a touch of gray here and there is advisable in decorative studies such as we are considering, such half-tones giving relief and preventing to some extent the "cut-out" appearance given by a large amount of featureless black.

We need hardly say that for silhouette pictures taken in this manner one does not need orthochromatic plates. Any make of slow plate will be suitable, but it is decidedly preferable to have it backed, otherwise sharp, clear outlines cannot be obtained. As a guide to those making a first attempt, we may mention that the examples here shown were taken on a backed Ilford ordinary plate, the exposure being (with stop $f/32$) half a minute on a bright day in June. The developer was the pyro-ammonia formula, used full strength, so

Fig. 3

as to obtain an even and very nearly opaque background, with all but clear glass to represent the objects photographed.

Printing may be done on gaslight paper, using an amidol developer to produce intense blue-blacks. Various decorative effects may be obtained as taste directs, by using masks or discs, a subsequent exposure, using a piece of clear glass as a support for the paper, being all that is required in this respect. As

regards subjects, naturally objects with pleasing and striking outlines will be selected. Simple forms are to be preferred, a few ivy leaves and fern fronds (fig. 1) being enough to form a "motif" for a study in the Japanese style of decoration. A mingling of one or two semi-transparent objects, such as the fan (in fig. 2) and spray of honesty (in fig. 3), seems also to aid composition and gives relief to what might otherwise seem too heavy an effect. In such studies as figs. 2 and 3 it is almost impossible to prevent some light falling on the floor of the box and detracting considerably from the silhouette effect. The difficulty may be quite overcome (as in these examples) by scoring a line through the film of the negative at

Fig. 4

the base line of the picture, the rest of the emulsion underneath being then removed with a sharp knife, so that absolutely clear glass only is left.—*The Amateur Photographer*.



"Correct Exposure"—What Is It?

By Charles F. Rice



It is coming to be more widely recognized every day among all photographers—professional and amateur—that correct exposure is at the foundation of all accurate camera work.

By "correct exposure" is meant an exposure that will give, so far as it is possible in black and white and gray, a truthful picture of the subject; and by "truthful" we do not mean merely as far as form is concerned, but particularly the relative gradations from white to black, from highlight to shadow.

The existence of such a thing as correct exposure has always been recognized, but it used to be considered that there was very wide latitude in the



Print on
Aristo Collodio Carbon

E. L. OWENS
NEWCASTLE, PA



A. O. COWAN, PHILA.

At-home Portrait, light, side window, 4 o'clock P. M., clear day in March. Seeds
plate, No. 26. Steinheil lens, $1\frac{1}{4}$ inch stop, 8 seconds; print on Angelo paper.

matter of exposure and that the main thing was to give time enough. After that, skilful development would make right any ordinary mistakes that might have been made in exposure.

The investigations of Watkins and of Hurter & Driffield upset all that. These gentlemen established the fact that only correct exposure, and within comparatively narrow limits, can be depended upon to give a truthful picture.

As a graphic demonstration of this, the example of the three houses is cited. There are supposed to be three houses—one white, one gray and one black—standing side by side, which are to be photographed together in one picture. Correct exposure will give a picture representing these three houses as white, gray and black; and what is most important, with the gray of the right shade. With underexposure the white and black may be all right, but the gray will be too dark, while with overexposure it will be too light.

The same principle applies to all other subjects, although it is not always so easily discerned as in the case of the three houses. Landscapes frequently suffer from overexposure, the effect of which is familiar to most of us in the flatness caused by the highlights and half-tones being too nearly the same tone—the *gray is too light*. Portraits and snap-shots are more likely to be underexposed, which is denoted by almost entire absence of detail in the shadows—the *gray is too dark*.

The right exposure in each instance will give us the highlights, half-tones and shadows in their proper relation.

Regardless of the development? You ask.

Well, no, not exactly. Exposure and development are so closely related that one process can hardly be considered without the other.

Watkins made a number of experiments with different developing agents, and his conclusion was that the ultimate effect of each and all was practically the same; that an underexposed plate was underexposed for all developers and an overexposed plate likewise. However, he admitted that the addition of bromide to a developer counteracts a portion of the exposure, or in effect makes the plate slower than if it were developed without the restrainer. Also that raising the temperature of the developer gives the same result as longer exposure.

All that was some years ago. At the present time it is further claimed, by those who are in a position to know, that some developing agents are more energetic than others at the same temperature and without bromide. For instance, that a plate developed with pyro might be apparently underexposed, while another plate just like the first and exposed the same might appear to be fully timed when developed with para-amidophenol.

If these things are true, and apparently they are, it will be easily seen that what is correct exposure for a cool, well-restrained developer of moderate energy might be gross overexposure for a very energetic developer used at a higher temperature and with no bromide.

Thus it becomes necessary for each experimenter to adopt some certain developer as a standard, to be used either without bromide or with a definite

proportion of it, and at a certain temperature, if he is to determine the correct exposure, or we might better say his correct exposure.

Duration of development affects the contrast between the extreme highlights and the deepest shadows, but the intermediate gradations retain their *relative* position, whether the development be short or long, within certain limits.

The choice of printing medium will decide what nature of negative is desired, and consequently the duration of development.

Recognizing the importance of correct exposure, and agreeing on a definition of that term, the question still remains, how are we to predetermine the right exposure?

Ingenious tables have been devised to overcome this difficulty, and their usefulness is admitted, particularly to the beginner. In unusual circumstances, however, exposure tables fail. Trial and error—in other words, experience—will give one a knowledge of the exposure needed under varied conditions. But this, too, is not infallible. Only the other day we met a photographer of many years' experience. He was deeply disgusted with himself for having misjudged the light conditions in making some difficult interior views. Said he, "I'm going to get an exposure meter."

Intelligent use of the exposure meter affords a means of accurately measuring light intensities and thereby determining the correct exposure under widely varying conditions. We say "intelligent" use, because even the meter cannot be trusted blindly. If the meter tells us to give two seconds' exposure and we find that four seconds would have been better, the next time we will double the exposure indicated. It is still, to some extent, a matter of "trial and error."

It must not be inferred, either, that a slight departure from the absolutely correct exposure is fraught with serious consequences. Experience teaches that there is considerable latitude; that the exposure may vary perhaps from one to five seconds (if three is correct) and still result in equally good and correct prints. Some plates have more latitude than others.

Then again we may sometimes deliberately overexpose or underexpose to gain an abnormal result, a picture showing less or more contrast than the subject, but in such a case it is just as essential to first ascertain the normal exposure.

"Correct exposure" is a relative term. It is not absolute nor independent of other things. But for a certain developing formula and brand of plates there is a correct exposure which bears a certain relation to the exposure meter time. It is for each of us to determine that "certain relation" for himself.



The Despised Blue Print

By Preston E. Anderson

THE average amateur, and how little removed we all are from this average amateur class, holds the blue print in contempt. A print in that medium at once stamps the maker as well-nigh devoid of all skill or taste in the eyes of many of his brother workers. Often the verdict is not far wrong, but, at the same time, judgment should be withheld until other evidence condemns. We should at least absolve the process from all blame; one might almost as justly condemn platinum as a printing process because the results secured by a slipshod beginner are so uniformly gray and muddy. However, we have seen the beautiful prints that right use and good negatives produce on platinum, and consequently the worker is blamed.

Did you ever see a really good blue print? If you have you will need little in the way of argument before agreeing with me that it is at least a process that gives a very pleasing variation from the usual output, particularly if it be used for suitable subjects. I have a vivid recollection of a most pleasing set of marine views which for many years ornamented the study of a friend. They were vignettied off, some of them, in a most effective manner, and the mats which surrounded them were cut from blue blotting paper, a tint and texture that exactly suited the prints. The frames were narrow mouldings of dull gold that still further set off the pictures. I am convinced that no other monochrome printing process could have better served the purpose of these particular negatives than our despised blue print.

Another reason why the average amateur should take up the process is that it gives him an easy and encouraging introduction to the work of preparing his own paper. True, the knowledge and experience gained by coating a few sheets of paper with ferro-prussiate solution will not avail him greatly when he comes to emulsion making for more complicated printing processes, but at the same time he will have acquired a certain amount of confidence

that will prompt him to succeed. Still further, the use of the blue print process will encourage one in the production of good negatives. A good negative for the blue print process will not only give a good print on practically every printing paper used, but the same negative is about right for either lantern slides or enlargements.

Almost any paper will answer if it be of fairly close texture and strong enough to stand washing and handling. Rather porous papers may require sizing, but this is by no means difficult. As the worker may wish to use some such stock for some special effect I will give a few necessary directions: One-half ounce of arrowroot and sixty grains of glucose should be mixed up in a little cold water; then about a pint and a half of warm water added, and the mixture boiled in a porcelain dish. When cool, the skin that forms on the surface is removed and the paste squeezed through canvas. The sheets to be sized are fastened down onto a board and the size applied with a soft sponge, spreading first one way and then crossing in the other direction. A second sponge of soft texture is used to still further even the sizing and remove any surplus. A very little practice will enable one to apply a most even and uniform coating. The sheets will dry very quickly if hung up in a warm room free from dampness. Sizing keeps the ferro-prussiate solution from sinking into the paper and producing results that are lacking in vigor. My own practice has been to utilize the back of spoiled bromide, gaslight and platinum prints, sizing such as I thought needed that preliminary operation. Another good plan is to reduce out the image from gaslight and bromide prints and sensitize the gelatine coating that remains. The same plan can be employed in the case of undesirable negatives, the resultant prints being used as transparencies. I once made a very pleasing window screen by getting a glass worker to lead together a number of these blue transparencies with suitable ground glass backing. The screen was used to occupy the lower sash of a window that opened upon a rather unattractive view of an alley. Spoiled plates and negatives should be selected that have been carried through without damage to the film. A strong solution of hypo is made distinctly yellow by the addition of red prussiate of potash, and in this the image will shortly disappear from the negative to be cleared. If the solution is too strong it may stain the paper in the case of a gaslight print, and for that reason it is best to use a lesser amount of the red prussiate. In either case, the plate or print should be removed as soon as the image is reduced out, and a good washing given.

The sensitizing solution is prepared by first making up the two following and then mixing them together. The first is: Ferric ammonium citrate, one hundred and ten grains; water, one ounce. The second: Potassium ferricyanide, forty grains; water, one ounce. The mixed solution keeps for several months if stored in a stone bottle, or even in a glass one if kept away from the light. It is well to filter the solution before using. It is better to obtain the green ferric ammonium citrate, if possible, and the crystals potassium ferricyanide should be washed clean of adhering powder before being used in making up the second solution.

Coating the paper is carried out in much the same way as advised for the sizing. Small "velvet" sponges, with a portion of their bulk crowded into the neck of small, wide-mouth bottles, make excellent brushes, and ones that stand upright instead of lying down where they are liable to pick up dirt or impurities. After coating, the paper should be dried as quickly as possible. Hung up in a warm, dry room, an hour should suffice. Hold near a fire if desired to hasten the work. The paper will not keep in good condition for more than forty-eight hours, but by adding a grain of potassium bichromate to every two ounces of the sensitizing solution, some keeping quality is conferred. It is not necessary to dry in absolute darkness. Gaslight or very weak daylight will do no harm.

Printing will require some, but not much, experience. Print in sunlight until the shadows show a metallic-looking bronze color. In printing, the paper first colors to a bluish-green, then into a deep olive-green, with the bronzing in the shadows. The paper is so cheap and its preparation so easy that there is little incentive to efforts in the direction of saving under- or over-printed results. However, if prints are not satisfactory after development, a weak solution of ferric chloride, say, thirty grains to the pint of water, will make a bath that gives slight intensification to weak prints. Too strong prints may be reduced in an alkali solution of like strength, using carbonate of soda or any other convenient alkali. Prints so reduced are inclined to a slaty-blue color, much less pleasing than the original blue, except, perhaps, for some special effects.

Developing the blue prints as they come from the frames is simplicity itself. The prints are washed through several changes of water, the process of removing the soluble salts requiring about twenty minutes. The only danger to be avoided is that of too long washing. Most tap water contains some alkali and thus has a more or less bleaching effect, as suggested above, in speaking of reduction. This reducing effect is not particularly detrimental were it not for the accompanying unpleasant degradation of the color. Where the water used is suspected, it is well to add about twenty grains of citric acid to the pint, giving the prints a final wash in plain water, to remove the trace of acid that may be left in the prints.

Many of the annuals and other hand-books contain directions for converting the blue image into one that is red, brown or some other color, but my own experience is that none of them is practical; at least, not to the extent of giving tones that are satisfactory. Experiment with them if you wish, but should you not be pleased with the result, you may console yourself with the fact that the author of this article has had no better success, although he has made thousands of blue prints, and has worked the process for over ten years.

And as to how many of these thousands of prints came to be made: It was my practice for a number of years to make a proof from each negative, on blue print paper, letter-sheet size. As most of the negatives were 5 x 7, or smaller, and but a few up to 8 x 10, there was a wide margin of blue printed all around, the left-hand one being used to bind them together in book form.

Not only did this practice give me a good index to all my negatives, but it gave me a perfect guide as to the printing quality of each. If the proof showed a print of good quality on the blue-print paper, I was sure that I could get a good print from that particular negative on almost any paper I might choose to employ. If the results were hard and contrasty, I know that I must select a paper accordingly. Another advantage was this : I was often bothered by my newspaper friends for prints. If they were shown prints on any other paper they pleaded they must have the desired ones at once, and that they would be returned promptly. The result was that, except in rare cases, the return was forgotten and my set broken. With the blue-print albums the originals were of no use, as they could not be reproduced, and consequently I had the pleasure of making the prints they wanted, having them appreciated accordingly, and, where advisable, charging for the trouble.

Learning that a solution of neutral oxalate of potash, to which a little gum arabic had been added, could be used with a pen, to reduce out the blue image and form lines in white, I adopted that method of inscribing the number and other filing data concerning each negative in the wide, blue border under each proof. About a dram of the oxalate should be dissolved in an ounce of water, and then enough gum arabic added to make it flow nicely from a pen. The solution is allowed to act for a moment and then the print given a slight wash. The same solution without the gum can be used with a brush or tuft of cotton, to produce vignettéd effects. I regret that it is impossible for me to have reproduced some of my own efforts in this direction, as they are, to me, much more satisfactory than vignettes made by the ordinary method of shading during printing.—*Camera Craft*.

The Kallitype Process

By Charles S. Taylor

SINCE its introduction by Doctor Nicol, some fifteen years ago, the Kallitype process has gained considerable popularity. This is as it should be, for few indeed of our many printing mediums can offer so many advantages.

The manipulation of this paper is of the utmost simplicity and the resulting silver image is one of great beauty. The more important merits of Kallitype may be mentioned as follows: Ease of working, rapidity of printing (four times quicker than blue-paper), great latitude in toning and modifying the printed image, small cost.

Yet, with so many attractive features, this printing method is not used to anywhere near the extent it deserves. In England Kallitype papers may be purchased at the photographic depots, but to understand and better appreciate its various merits, home-prepared paper is recommended. You must not infer from the foregoing that the boughten paper is not satisfactory; this is by no means true, for I have both seen and made many excellent prints upon the commercial brands.

The great advantage of home-made stock lies wholly in the choice of the support or paper stock used. This choice is almost unlimited, and we may use smooth, medium and very rough papers, from tissue to the heaviest bristol board. Prints may also be made upon fabrics, and sofa pillows, scarfs and banners offer pleasing decorative features which should not be overlooked.

A selection so wide is of great use toward producing, in the print, any special effect deemed necessary to the pictorial rendering of a given scene. The texture of the support is of the greatest importance in securing this desirable quality, which is perhaps best appreciated by those workers who use the platinotype medium.

The sensitizing solution is prepared thus:

| | |
|----------------------------|-----------|
| Sodium ferric oxalate..... | 75 grains |
| Silver nitrate | 30 grains |
| Distilled water | 1 ounce |

The ferric oxalate may be purchased in the solid or solution form. The latter is more convenient, and for a 20 per cent. solution, 400 minims of ferric oxalate is taken, and this made up to one ounce. The solid oxalate comes in pea-green crystals, which should be dissolved in warm water, the bottle put in a pan of boiling water and shaken until dissolved. When cold add the silver, then filter. The operation of mixing should be carried on by lamp or weak daylight. This sensitizer keeps indefinitely if kept in a dark place.

If possible, distilled waters should be used in making solutions, but if not readily obtainable, filtered rain or even boiled and filtered well water may be used. The ordinary tap supply is not so suitable.

The paper or fabric is first pinned by the corners to a board and the sensitizer applied with a sponge, camel's-hair brush or a tuft of cotton. My method is as follows: The necessary quantity of the solution is poured into a saucer or other convenient dish, and the paper coated with a tuft of cotton inserted in the mouth of a vial or small bottle. With this mop first brush up and down, then across the paper, care being taken to overlap the strokes. By going rapidly over the paper in this manner, a uniform coating free from streaks is made. Rough papers and fabrics require the use of more solution, mopped well into the support.

Dry the coated support by moving to and fro over a lamp, which is preferred to other illumination. Lamplight will not affect the paper in a reasonable length of time. It is necessary that the paper be through-dry before printing, and this may be told by remembering that the dry paper curls with the sensitive side inward.

Exposure is shorter than with silver printing-out papers; the image is faintly seen as a blue-brown upon a yellow ground. Printing is stopped when detail in the highlights is just visible. Thin negatives require a minute, while dense ones may take up to ten minutes.

Developing is done in the following baths, the warmth of tone depending upon the proportion of Rochelle salt:

BLACK TONES.

| | |
|--|-----------|
| Borax | 40 grains |
| Rochelle salt | 25 grains |
| Water | 1 ounce |
| 1 per cent. solution potassium bichromate..... | 35 minims |

PURPLE TONES.

| | |
|----------------------------|-----------|
| Borax | 45 grains |
| Rochelle salt | 10 grains |
| Water | 1 ounce |
| Potassium bichromate | 40 minims |

SEPIA TONES.

| | |
|----------------------------|-----------|
| Rochelle salt | 25 grains |
| Water | 1 ounce |
| Potassium bichromate | 20 minims |

Overexposed prints and thin negatives require more of the bichromate solution. Prints must be immersed in the developer for half an hour. This is to make the remaining iron soluble. Carelessness in this respect is productive of stained and fading prints.

The fixing bath is made of strong ammonia (30 per cent. water), 7 minims; water, 1 ounce. Let prints remain in this bath for ten minutes, then wash in running water for half an hour.

The amateur will find in the Kallotype process an extremely interesting and capable printing medium. A fairly wide range of tones may be obtained by using different salts, together with the borax bath.—*Photo-Bacon*.



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AN INDEPENDENT MONTHLY MAGAZINE DEVOTED TO THE
ADVANCEMENT OF PHOTOGRAPHY

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Items of interest upon photographic subjects will be gladly received.

Subscriptions received by all photographic and news dealers in the United States and Europe.

OCTOBER, 1907

The editor of the *Bulletin of Photography* is constantly harping upon the subject of art from the painter's standpoint, and belittles photography by dubbing it "but a black and white mass." Whilst we accept the black and white end of the argument and admit that photography is in monochrome, what would the "masses" be to-day without photography and its beneficial teachings? What would art really be without its photographic reproductions? We fear that the public would see but little of art were it not for the great benefits that we receive from photographic reproductions of the masterpieces. A Reubens is known to be in such and such a gallery—probably a couple of thousand miles away—or some of the beautiful pictures of Italy or of the Louvre may be shown. How many of our readers are in the position to go and see these masterpieces and how many can spare the time? Surely photography has educated the masses, and the education has been of a permanent nature.

If we cannot admire the beautiful originals, thanks to photography, we can admire their duplications.

A few years ago we conducted a department of criticism of "Home Portraiture" under the management of Prof. Felix Raymer and it met with success for a time, but our readers evidently did not like to have their work criticized truthfully—hence the entries fell off and we discontinued the department. We have been requested so often of late to resume the work, that we have concluded to give it another test. We append a few rules for your guidance:

1. Only one print criticized from each inquirer.
2. All prints must be sent to Prof. Felix Raymer, Effingham, Ills., postage fully prepaid (do not send prints to the office of THE CAMERA).
3. Give full particulars regarding the making and mounting of the print, and be brief.
4. Do not send a print unless permission is given to publish it with the criticism.

✱

Foreground

It is not often that one meets with an interesting foreground in a landscape. The tendency in the old painters used to be towards unobtrusive foregrounds, but modern painters have demonstrated the artistic value of the complex foreground. True, in the majority of cases, grandeur is secured in landscape by striking a lower horizon line and thus cutting off foreground to a considerable extent. Flat plains and sandy beaches of the sea have a more imposing effect when the sky, even if it be void of clouds, occupies as much as three-fourths of the picture.

It gives the impression of atmosphere and space. In mountain scenery, however, the horizon should be taken higher, because it gives dignity and height to the mountains, a low horizon in such cases dwarfing the effect too much. Nevertheless, enough attention is not paid to the composition of the foreground and its relation to the background and the figure itself. When figures are introduced it is essential that the foreground should at least have some feature in it sufficient to attract attention, but not so pronounced as to call the mind away from the figure itself when the figure is intended to be the motive of the theme.

Nature is a broad field for photographic study and a field which yields a rich harvest to the man who can till it.

No truly great artist ever allowed even the finest pictures of the masters to stand between him and nature.

We all know that Flaxman, classical as he was, derived the hint of many of his most excellent compositions, and even single figures, from the streets and from the drawing-rooms, and still more from his own domestic circle.

Stothard speaks of walking the streets for inspiration.

His sketch-books are filled with groups of figures and scenery made without selection—merely what chance offered while traveling. Sometimes objects which the window of an inn presented while horses were changing, and sometimes what he saw from the top of a stagecoach. So that he did not fall into the error fatal to originality of going to nature for things only that resemble what may be seen on the painter's canvas.

Among the drawings by Raphael, collected by Sir Thomas Lawrence, are many, evidently what chance presented to him. There is one sketch in particular most characteristic, of three young men in the dress of the time, sitting at a table with but slightly varied attitudes, in all probability an accidental group that caught his eye just as it would the eye of the hand camera.

AMONG the BOOKS

Our readers will be pleased to learn that the forthcoming edition of the *American Annual of Photography* for 1908 will be replete with handsome illustrations and articles of the highest merit on the pertinent subjects with which photography has busied itself during the past year. The *American Annual* will be issued as usual in November, but as the edition this year has been ordered in advance, it behooves the photographer and amateur to place his order early, so that he may not hear the only too frequent remark of late years, "All sold out." The publishers inform us that the *Annual* can be had of all dealers as heretofore. The American distributing agent is

G. Murphy, Inc., 57 E. Ninth street, New York, where dealers are asked to forward their orders as early as possible. Price, paper, 75c.; cloth, \$1.25. Messrs. Murphy are also agents for the 1908 *British Journal Almanac*. Paper, 50 cents; cloth, \$1.00. Postage extra.

✽

Photographic Enamels. From the French of René D'Heliecourt. Cloth, \$1.25. Tennant & Ward, New York.

This work is a translation from a book well known in France, where it has reached a second edition. It is a most excellent work, thoroughly practical, and treats not only of photo enamels but also of painting on glass. The translation, however, is limited to the subject of photo enamels pure and simple.

The book, though containing less than an hundred pages, is a most comprehensive treatise, worded in an explicit manner and is the result of practical experience, which is of such essential value to the photographer.

The practical worker will find this book of value to him, as the subject is presented in a most clear and comprehensive manner. All the details are emphasized and the unimportant minutiae subordinated.

✽

Collodion Emulsion. By Henry Oscar Klein, with special reference to tri-chromatic work by Henry Oscar Klein. Tennant & Ward, New York. Cloth, \$2.50.

This work has been written to serve the needs of the practical photographer, who is only anxious for practical results and cares little for scientific explanation of the rationale of processes. The work deals chiefly with the application of the Collodion Emulsion work, but kindred topics are not neglected, much to the edification of the reader. The author evidently is a practical worker, and that counts much with the photographer, who looks more for results than for rationale of methods. The book is surcharged with valuable information, and is excellent reading. Evidently the writer is thoroughly posted on his topic and is more concerned in the conveying of information in a terse, concise and intelligible manner than with style of composition. The treatise is exhaustive and cannot fail of being of essential value to the worker.

All questions relating to technical matters, processes, working instructions, etc., are referred to competent experts in the particular subject referred to, and the utmost is done to insure reliable and practical answers being given.

Correspondents are requested to first state their case and then number each question; they should also write on one side only of the paper, and enclose correct name and address—not necessarily for publication. No attention will be paid to anonymous communications or those only signed with initials.

We do our best in all cases to publish the replies in our next issue following the receipt of the inquiry, but cannot absolutely guarantee this.

All inquiries should be addressed to THE CAMERA, 606-608 Sanson Street, Philadelphia.

No questions answered by post. No prints criticised.

EDINOL, ETC.—Will you please publish formula for edinol and edinol-hydrochinone for Cyko papers? Also any other non-poisonous developer.—F. P. S.

EDINOL.

| | |
|-------------------------------|------------|
| Edinol | 37 grains |
| Sodium Sulphite (des.) | 120 grains |
| Sodium Carbonate (des.) | 200 grains |
| Water | 10 ounces |

Add enough potassium bromide, 10% solution, to keep the whites clear.

EDINOL-HYDROCHINONE.

| | |
|-------------------------------|------------|
| Edinol | 20 grains |
| Hydrochinone | 10 grains |
| Sodium Sulphite (des.) | 120 grains |
| Sodium Carbonate (des.) | 200 grains |
| Water | 10 ounces |

Add enough potassium bromide, 10% solution, to keep the whites clear.

AMIDOL.

| | |
|--------------------------------|----------|
| Amidol | 8 grains |
| 60° test Sodium Sulphite | 1 ounce |
| Water | 1 ounce |

Add a few drops 10% bromide solution.

SILVER STAINS.—Will you kindly give me some formula that will take silver stains off a glass plate negative? The film is blotched all over with these stains, which appear brown when seen by transmitted light, but which look like silver when seen by reflected light. —W. M. F.

Undoubtedly the stain to which you refer has been caused either by imperfect fixing or the stain from the silver paper used in printing the proof. In either case we

recommend a dilute solution of cyanide of potassium, about five grains to the ounce. Apply carefully with a tuft of cotton until the stain disappears, then wash well in water, being careful to throw out your solution of cyanide where it will do no harm, as it is the most dangerous poison used in photography.

VARNISHING PRINTS.—A short time ago I saw some redeveloped gaslight paper and sepia platinum prints with a gloss that made me think they were carbons, but I was told that they were varnished. Will you tell me what kind of varnish and what material is needed? —C. R.

Many formulæ have been printed of late regarding print varnishing, but one of the best and at the same time the simplest is that given us by a celebrated Boston photographer. Take a lump of ordinary beeswax, melt it and add enough turpentine (about 1 to 3) so that the mixture, when cool, is about the consistency of vaseline. Apply the mixture to the print with a soft brush or a piece of cotton waste. Another photographer uses the ordinary russet leather shoe polish, but this latter method may not be as permanent as the first formula.

✽

In the *Wiener Mittheilungen* Baron A. F. Von Hübl publishes a detailed description of the process of obtaining prints in the colors of nature by the bleaching process, on Uto paper, as put on the market by J. H. Smith & Co., of Zurich.

The black color-sensitive surface of the paper consists of two coatings, an upper of yellow and blue dye, together with a substance, Anethol, increasing their sensitiveness to light, and a lower of red. The red layer in contact with the paper is not of itself affected by light, and is rendered sensitive by means of peroxide of hydrogen during the printing.

Each color reflects the light of its own shade, and is consequently acted on solely by the other colors. Fixing consists simply in removing the sensitizer (Anethol) by means of benzine, the red layer becoming inert as soon as the peroxide evaporates.

Printing requires from twenty minutes to an hour in the sun under a colored positive.

The editor has given me the privilege of having my little "say" once in a while, if I stop being too pessimistic. For several months I've had to keep quiet, but when I brought several matters to his notice before he went to Boston he said, "Go ahead, but be good." But how can I be good when I see a photo like this one I got from the *Travel Magazine*? Which is the village beau—the goose or the man? Darned if I know which, but I'll give a lemon to the first solver of the riddle. Then the Jimtown Exposition fellows want some "dough" (guess we all do), but why the dickens do they need to charge a fellow for breathing? Why should a fellow pay fifty cents to expose a dollar's worth of

film or plates? Surely there's nothing beautiful in a lot of plaster buildings! Any chap who comes along can photograph our barn and we don't ask a cent for the license. You get "flammed" on every side, and if we ever have another exposition in the United States I do not see why the management will not sit up and take notice. In the good old days of the Centennial (and that was the best ever) no charge was made for photographing, but, unfortunately, photography was practically a baby in those days and a fellow had to fiddle with wet plates, meeting difficulties that we know nothing about in these days of "easy snaps." The free advertising an exposition gets through the amateur photographer should really be enough to pay to make them happy, but, like all politicians, enough is not good enough for them.

✽

Dust

The photographer shares with the housewife a wholesome antagonism towards dust. Dust in the camera is a most prolific cause of pin-holes in the negative. In box cameras, sometimes, the changing mechanism will fret the woodwork, thus giving rise to dust, which settles on the films of the plates. In this case the remedy is obvious, and in most instances a very little adjustment is necessary to cure the trouble.

Dust, however, will collect in the body of the camera, and this needs to be removed at intervals. Whisking with a duster or brush may get rid of the bulk of it, but there will always be a certain amount suspended in the air which settles in the camera again after a while. The best plan is to have the duster slightly dampened or smeared with a very little glycerine, which will pick up the dust without disturbing it very much. Or if the camera be dusted in the ordinary way and then a piece of wet blotting paper put on the bottom, the dust will be attracted to the blotting paper and settle there. The bellows of stand cameras are extremely liable to collect dust, and the same procedure may be adopted in connection with them. After dusting the camera the bellows should be allowed to remain extended until the dust has thoroughly settled, unless the worker is sure he has picked it all up on his damp cloth.—*Focus.*

"Billy" Lussier (everybody knows Billy, because he sold Goerz Lenses), is now the California representative of the Artura products at 559 E. Twelfth street, Oakland, Cal.

✽

Professor Conkling, of the University of Pennsylvania, tells, in *Harper's Magazine*, how Dr. Köhler, of Jena, has devised a process "to photograph wholly invisible objects by wholly invisible light."

✽

It is stated, from a reliable source, that the Carbona Company, 104 Second street, North, Minneapolis, Minn., have been "sold out under sheriff's sale and absolutely nothing for the creditors."

✽

The Gundlach-Manhattan Optical Co., 804 Clinton avenue, South, Rochester, N. Y., say "It's all in the Lens," and they want to tell you about the Turner-Reich Convertible Anastigmats f/6.8. Their handsome catalogue should be in your hands.

✽

The good qualities of the Hammer Dry Plate have never been more in evidence than they are at the present time. Enlarged facilities for their manufacture and the most perfect, modern machinery, coupled with a rigid inspection of every batch of plates manufactured, has resulted in a product of uniformly good quality throughout. Hammer Plates are made in such variety of speeds and working quality as to fit them to every requirement of modern photography, either in the field or studio.

The announcements of this firm in our advertising pages are full of interest from month to month, and are serving to introduce the Hammer Plates to many who have not known them before. This introduction is in most cases all that is necessary; the plates do the rest, and the demands upon the capacity of the factories are steadily increasing.

Honors are coming to the Angelo Sepia Platinum, and at Boston all the first prizes went to prints made on Angelo. This is the paper that gets the things out of a negative that you have missed—and it is a paper easy to manipulate. All the dealers have it in stock.

✽

The Mirmont Photo Paper Co., Dept. B, Glendale, Brooklyn, N. Y., want you to try their No. 20 New York Developing Paper on that negative that you've never been able to get a good print from. They claim that it is good for every class of negative as well, and want to prove it by sending samples and prices.

✽

The "Dynar" lens of the Voigtlaender & Son Optical Co., 127 West Twenty-third street, New York, is especially suited to the 3a Folding Pocket Kodak, as the lens will screw right into the Auto Shutter fitted to the Kodak without any adjusting but what you can safely do yourself. The lens works at f/6, and the No. 3 size (4x5) is sold at the extremely low price of \$25. This is really the cheapest high-grade anastigmat on the market. Other sizes are made up to and including 8x10. Full descriptive particulars can be had of the makers.

✽

To get speed in a shutter, and a reliable speed, has been the greatest bugaboo for years past. Many shutters (photographic) have been placed upon the market during the past ten years, but one that has really met the requirements of those who are over particular is the new Multi-Speed. On another page we show an example of its work, but the shutter itself needs more than such a photograph to tell of its merit. The makers want you to have a booklet that will tell about one-third of the story—but the shutter is the practical end, and what you should have. Address the Multi-Speed Shutter Co., 324 E. Sixty-fifth street, New York.

We understand that the business of the C. P. Goerz American Optical Co., Union Square, New York, has increased to such an extent that a large building is being erected near New York in which both the present American factory and office will be under one roof. The new building will occupy a site of a couple of acres.

A few years ago, when one wanted a good print trimmer, there was nothing on the market under ten dollars, and even then the trimmers were not as good as the "Popular" now made by Milton Bradley Co., Dept. 4, Springfield, Mass. This trimmer cuts a 15-inch sheet and is sold for \$7. The makers will be pleased to send an illustrated description of it.

During the late tempestuous period of Mount Vesuvius, Dr. Eisen, of San Francisco, resided within easy reach of the volcano and, fearless of danger, ascended each day to the top, that he might acquire photographic effect to be gotten by no other methods. The reward for these daily pilgrimages is manifest; one picture in particular disclosing a scene of terrific eruption, and showing distinctly the ash-beclouded atmosphere.

A little pinch of salt, a teacupful of flour, etc., is the usual housewife formula for a flap-jack, but the cracker-jack way to make Velox prints is to take an ordinary beef-steak broiler and fix it on a gas bracket just as L. H. D. says in *Good Housekeeping*. Naturally, it wouldn't be a "good house" without Velox, and if you want to know more about the broiler, read the hot arguments the Kodak people have in our advertising pages.

In a South Jersey town, where the Constables and Magistrates make the life of the speeding automobilist unhappy, a Philadelphia newspaper desired a photo of the Judge and sent a staff photographer to get it. The Judge saw the photographer "snapping" him and warned him to stop, but without effect. Then the Magistrate, although an elderly man, being muscular, proceeded to administer justice then and there, severely trouncing the photographer and demolishing his camera.

The new process of color photography has aroused an extraordinary degree of attention, and as the latest news from France is that the plates may be available in a month or two, *Photography* thinks it possible that the amateur photographer may soon get pictures which are faithful in color as well as in outline.

In our travels this summer we have naturally examined the show cases of the photographers in the cities visited, and it is surprising how many have adopted the Moore Push Pin for fastening up the show prints. The pins do not detract in the least and a print can be hung up without marring it or the walls. The pins can be had of all dealers, or the Moore Push Pin Co., 119 S. Eleventh street, Philadelphia, will mail a sample package of six for a dime.

There's less labor in making an Ozobrome print than its name suggests. Chemically it may mean much, practically the trouble is but a trifle. An Ozobrome print is really a carbon print and without the carbon muss and slop. First make a Velox or a bromide print, put it on a piece of Ozobrome tissue, throw it then into warm water, then into a hypo solution, wash for a couple of minutes and you've got a carbon print that is absolutely the greatest thing you ever saw. All the dealers have Ozobrome and its solutions in stock. Try it and see how good it is.

Dallmeyer Portrait lenses and Cooke anastigmats are still to the fore. The American agents claim that there are more Dallmeyer lenses used in the best American studios to-day than all other makes of portrait lenses combined. A bold claim this, but one which we do not for a moment doubt, considering the reputation gained by these lenses in forty or fifty years.

Cooke anastigmats are comparatively new to this country, but the reputation that they have gained within little more than four years is nothing short of phenomenal. The Taylor, Taylor & Hobson folks, Broadway and Twenty-sixth street, New York, have a booklet that will tell you about both lenses. It is yours if you only say the word.

The Anthony & Scovill Co., Binghamton, N. Y., were unfortunate in having a big fire at their film plant recently, and this will interfere with the delivery of the new improved Ansco Film. However, their Cyko papers require no improvement, and if you want to know about Cyko, get a package from your dealer or ask the Anthony & Scovill Co. for the new Cyko booklet. The booklet may be had for the asking for it.

✽

In order that photographers may be enabled to make a practical test of "Tabloid" Photographic Chemicals and familiarize themselves with the convenience and reliability of these products, Burroughs Wellcome & Co., 45 Lafayette Place, New York, are now issuing specimen sets of "Tabloid" Photographic Chemicals to retail at 15 cents and 30 cents. Further particulars are given in the booklet which accompanies each set.

✽

Our "Old Oaken Bucket" competition has been the most successful one that we have held for several years—probably its novelty has had much to do with its success—and success has also crowned Dr. Mitchell's efforts with his new developer, "Bromo-Print." To those to whom Metol is poisonous, it will be the desiderata. If you want to try "Bromo-Print" and prove its worth to your own satisfaction, just tell Dr. Chas. L. Mitchell, 1016 Cherry street, Philadelphia, that THE CAMERA said you could have a free sample.

✽

We are in receipt of a communication from the C. P. Goerz American Optical Company, of New York City, stating that they would like very much to regain possession of Lens No. 200,000 of their manufacture. This lens is a Celor No. 2 and was sold in March, 1906, to R. J. Golsen. The reason, they state, that they are anxious to have this lens is that their Berlin office wishes to add it to its collection, which contains lenses Nos. 1, 1,000 and 100,000. We would advise the owner of lens No. 200,000, should he chance to read this article, to communicate with the Goerz people, as it no doubt would be to his interest to do so.

Amateur photographers who wish to turn their art to a commercial account by selling snapshots to their human victims have discovered a new field of endeavor. They haunt riding academies and the equestrian paths in the parks and photograph the riders. Men on horseback have a weakness for being photographed. Many a rider who could not be persuaded to pose for a photograph in conventional attitude or garb is quite willing to be taken astride a fine horse, and any photographer who can snap him successfully is sure of a market for his pictures.

✽

Encountered in the Rue Scribe by a Paris correspondent, Burton Holmes, the "Traveloguer," threw a little light on his plans for the coming series in this country.

"I am going to tell them and show them pictures of real life in Paris, the crowded streets, the rush of vehicles, the activity of traffic, which is much greater than in New York or Chicago. Then, too, I will show them the last note in costumes. I have been taking a photographer around in an automobile up and down the Rue de la Paix and the Champs Elysees for this purpose. He caught fashions which will not reach Fifth avenue for a year yet."

✽

The summer harvest or your vacation pictures are now occupying your attention, but, instead of making the ordinary prints, why not make Bromide Enlargements. This is one of the most attractive things in photography. You do not have to make the apparatus necessary for the work—that's ready for you at a very low price. Whether you use gas, oil or electric, the new models of the Ingento Enlarging, Copying and Reducing Lanterns fill the bill. The same lantern may also be used for making lantern slides and projecting them on the screen. Burke & James, 118 W. Jackson Boulevard, Chicago, are the makers, and they have many other labor-saving devices that will save you dollars. Their catalogue is free on request.

✽

We want the correct name and address of "Edinol" in our "Old Oaken Bucket" competition.

Probably no article that has appeared in *THE CAMERA* has been quoted at home and abroad to a greater degree than Mr. Claudy's article in a recent issue on "tank development." The latest honorable mention is that even the Japs have caught on, and the article has been printed in the *Yum-yat*, or whatever the correct translation of the name may be; but, *tank development requires no translation*. If we had been fortunate enough to discover tank development when we began our photographic work, the idea would have been patented, and, as our friends, the Irish, say "Pat 'en Ted," of course "Pat 'en Ted" would be millionaires to-day, but nobody can improve on the tank, whether for the plate or the firm, and the tank is distinctly "it" for all that is good in photography. The tanks you need are:

The Kodak Tank, for films.

FOR PLATES:

The Auto Tank, G. Gennert, New York;

The Ingento, Burke & James, Chicago;

The Aucelo Tank, John Haworth, Philadelphia;

The Murphy Tank, Geo. Murphy, Inc., New York.



Care in Use of Anastigmats

The great flatness of field as well as large aperture of the modern anastigmat together call for great care, much greater than is usually accorded to the fitting of the lens to the camera; otherwise the lens may come in for condemnation and seem to be inferior in its qualities to the old-fashioned rapid rectilinear.

The plate should be parallel with the camera front. If it is not, the sharpness of the image in some parts will fall short. The plate, too, must come in the same position as the focusing screen, or the results will be much further out of focus than with an ordinary R. R.

We are speaking of the anastigmat used with opening. When stopped down the liabilities are no greater than with the R. R.; but, then, why should we cripple the powers and possibilities of an anastigmat when a little common sense may enable us to enjoy to the full its wonderful capabilities of working with large aperture and extended field?

Dinkelspiel on Amateur Photography

BY GEORGE V. HOBART.

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Home. Yet.

Mein Lieber Looey—Ve haf receifed your letter from Rasbury Park und ve vas glat dot you haf anudder opportunities to combination pitzness mit pleasure und get your shoulders all sun-burned vile making a bluff at commercial trafeling.

Yout' vill haf its fling.

Ve vas all vell at home mit der eggsception dot your mother has been enchoying a slight brain storm.

You know, Looey, your mother has nice ideas aboud domestic economies und dot is vy last week she bought vun of dem kodax machineries for removing pictures from der face. Dis machineries also pinches leedle soufenirs from der landscape, und if you get der right point of view you can make a four-dollar doghouse in der suburbs look like der bungalow of a Vall street broker near Newport.

Ten minutes after your mother brought der kodax machineries home she hat me set up as a statue all ofer der lawn, und she vas snapping at me like a Spitz doggie at a perfect stranger.

I set for 219 pictures dot forenoon, so I supposition if she snapped like a Spitz I must have looked like a setter. (English choke.)

Anyway, before I vas through setting I felt like a hen, but ven she vished me to climb up on a tree und stay dare till she pinched a picture of me looking like a owl I svore bitterly, fell ofer der back fence und ran for my life.

Ven I softlied back dot afternoon your mother vas busy deweloping her crimes. You know, Looey, der new idea aboud taking snap shootings dese days is to buy a deweloping oudfit und upset der household from pit to dome vile you vas squeezing ouid pictures of efery dearly beloved friend dot crosses your pat'way.

Your mother selectioned a spare room on der top floor vare she could avait dewelopments, und a half hour later ghostly noises began cameing ouid of dot room, und mysterious visperings fell ouid of der vindow und bumped ofer der lawn.

"I SET FOR 219 PICTURES DOT FORENOON"

Ven I reached der front door I found dot der gardener had left, der vaitress vas leaving, der baby hat discharged der nurse und der nurse vas telephoning for a policeman.

"Vare is Mrs. Dinkelspiel?" I inkvired by Katie, der housemaid.

"She is still deweloping," set Katie.

"Vot has she deweloped?" I inkvired.

"Up to der present time she has deweloped der cook's temper, und she has deweloped der baby's appetite, und a cubble of bill collectors deweloped a pain in der neck ven dey could not see her, und if dings keep on dis vay I tink dis vill soon dewelop into a foolish house," set Katie, der housemaid.

Yust a leedle bit later, vile I vas sitting on der front piazza, not daring to breathe above a visper for fear I vould get pictured, your mother rushed oud, eggsclaiming, "Oh, choy! Oh, choy! Dinky, I haf deweloped your face, yes!"

I vish, Looey, you could haf seen your mother's eggspression on der countenance.

You know, to dewelop der face on der negative of der snap shootings a lot of drugs und comicals vas used.

Vell, your mother hat used dem.

A silent leedle stream of vood alcohol vas trigging down ofer her left ear into der apex of der neck und on der end of her nose abound sigs grains of bichloride

of potash vas sending oud signals of distress to some spirits of turpentine vich vas burning on der top of her right eyebrow.

Her right hand hat red, vite, green, purple und flesh colored marks all ofer it, und der left hand looked like a rainbow vich hat been left out in der rain all night.

"Dinkey," she yelled, "here is it! Here is it! Ach, Himmel! doan'd you look such a fineness in der face, yes!"

She handed me der picture, but all I could see vas a voodshed mid der door vide open.

"A good picture of der voodshed," I vispered "hut whose voodshed is it?"

"A voodshed," eggsclaimed your mother. "Vy, dot is your face, und vare you dink der door is open it is only your mouth."

I looked chestfallen, hut made no attempt to strike dis defenceless voman.

Den she handed me annuder snap shootings und set: "Dinkey, here is vun I took of you und Wagner."

Wagner is der name of our new dog. Ve call him Wagner because der cheneral public doan'd appreciation his moosic.

I looked at der picture and I set py your mother: "All I can see is T'eadore, our colored gardener, walking across lots mit a sack of flour on his back."

"Dinkey, vy vas you such a stupidity?" set your mother. "You haf der picture upside over."

I turned der picture around und den I vas pleasurablely embarrassed.

"Ain't it grand?" I vispered. "I suppose it is called 'Moonlight on Lake Champlain,' yes? Dit dis vun come mit der camera or dit you draw from memory?"

"Der idea of such a nonsense!" your mother snapped. "Doan'd you see it vare you haf der picture backwards? Upside down it und you vill see yourself und Wagner, barking choyously, yet!"

"Ach, Himmel!" I set. "Now I haf it! You vished to surprise me mit a picture of der sunset at Governor's Island. How luffly it is! See, dere is a bunch of soldiers listening to vot is cooking for supper, und dere is der smoke from der gun vich sets der sun. I like it!"

There is Room for All

There was received by the editor of *Photo-Era*, recently, an anonymous letter of a peculiar character. Resorting to exceedingly intemperate language, the writer took us to task for assuming an attitude of silence regarding "the war that is being waged against the trust." Although we manage to keep tolerably well informed about what is going on in the photographic world, we were not aware of the existence of such a movement in this country. We are in frequent touch with dealers and consumers, throughout the United States, and no complaint of the nature indicated by the anonymous critic has come to our attention. If, as he contends, any considerable

"DOAN'D YOU SEE IT VARE YOU HAF DER PICTURE BACKWARDS"

Den your mother grabbed der picture ould of my hands und burst into speech.

Ven der eggercises vas ofer I vispered t'oughtfully. "Vare, my dear, vas der udder 348 pictures you snap-shooted to-day?"

"Only dese two came ould goot, because I vas yet a amachoor," she responded, peeling some bicarbonate of magnesia off her knennuckles mit a nut cracker.

"Only 2 ould of 348—such a long shot for der snap shoots," I vispered.

Den I looked vistfully at my pocket-book, but it made no answer und set nuddings mit consolation in it.

Yours mit luff,

D. DINKELSPIEL,
Per George V. Hobart.

percentage of the dealers are dissatisfied with the conditions imposed by this company upon the sale of its goods, why do they not form an organized protest? Why do they permit themselves to be oppressed by a "heartless and sordid monopoly?" There is nothing like good, healthy opposition, if well organized and properly conducted. Why, indeed, do these merchants continue to sell photographic supplies against their will? There have been numerous conventions of photographers, National and State, at none of which this subject, "so vital to the interests of the craft," has been given any serious consideration.

The success and popularity of the goods of the firm in question are due to three causes—the excellence of its products, an able business policy and judicious advertising—the last involving the expenditure of vast sums of money. It must be borne in mind that the dealer has been saved the expense and trouble of advertising these “objectionable” goods. He has but to make it known that he carries a line of these cameras and films, and business comes to him like magic. But our mysterious correspondent seems to forget that there exist similar lines of goods of excellent quality made by other firms. These the dealer is at liberty to carry in place of those which, the agitator tells him, are made by the hateful trust and should, therefore, be tabooed. After all that can be said on this matter, it is simply a question of supply and demand. It seems to have a faculty of regulating itself. The so-called “anti-trust” manufacturers are busy and prosperous; i. e., those whose products stand the test of successful application. They have established a steady demand for their products, and this, in many instances, without resorting to the undignified method of abusing their competitors. An inferior article cannot expect to compete successfully with one of superior quality, and no amount of advertising and misrepresentation will ensure its success. When a camera, lens, plate or paper has true and lasting merit and meets the requirements of the practitioner it will sell.

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The Injurious Effects of Darkroom Light

has been the subject of investigations by Dr. A. Staerkle, of Basel, who finds that of the artificial lights petroleum is the least harmful light, and is followed in order by gaslight, electric light, incandescent gaslight, and acetylene, the last-named being most harmful. Thick colored glass—gray, yellow, red or green—lessens the injurious rays; therefore there is little or no danger of injuring the sight in the darkroom. The injurious effects of light on the eyes are found to increase with the number of ultra-violet or chemical rays contained.—*The Photographic Dealer.*

U. S. S. Yankton,
Provincetown, Mass.

Editor THE CAMERA.

Dear Sir: In the September number of THE CAMERA Mr. Jeffcott stated that he had difficulty in dissolving the boric acid used in his “Pyro Stain Remover.” If Mr. Jeffcott will use *hot* water in effecting the solution, first making the acid into a thin paste with a little of the water, he will find the difficulty obviated, as the acid dissolves almost instantly under these conditions, and the resulting solution retains all the desirable features of that made by the cold process.—CLARENCE E. COBB, U. S. N.

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Editor THE CAMERA.

Dear Sir: Enclosed find sealed envelope containing identification mark placed on pictures for “The Old Oaken Bucket” sent you under separate cover.

Getting them together has been most interesting and enjoyable work, although done too hurriedly to be very well done, as I did not know of the contest until a week or two ago, when a friend lent me some back numbers of your magazine.

While writing, may I express my appreciation of the latter, especially the articles by Mr. Claudy. The two on “The Relation of Exposure and Development,” with the chart, are more helpful than anything else I have seen. I have spent many hours studying them and comparing negatives with those shown on the chart. As a beginner in photography, and with no counsellor at hand, one of my chief difficulties has been to know what is the matter with the faulty negatives. I believe I know a good one when I see it, also a bad one. But *why* it is bad, underexposed or underdeveloped, overexposed or overdeveloped, or what? That is the question. However, I am now using the tank, and cannot say too much in its praise.

Please pardon this long letter, but I have frequently wished I could say a word of thanks to Mr. Claudy. If I find myself reading an article which seems particularly interesting and to the point, it invariably turns out to be by that most helpful writer, whose efforts on behalf of struggling amateurs are certainly appreciated by yours truly,
MRS. A. F. F.

Photographic Work of Art

Mrs. S. had presented her washerwoman with an amateur photograph of her young son, aged six months, clothed only in infantile innocence, but turning his back upon the scene and embracing a dog, *à la* a well-known painting. A little later the craze for enlarging family portraits struck the town like a tidal wave, and on the crest of the wave was assuredly Mrs. S.'s laundress. "We had that photograph you give us of Towser and the baby done along with the rest. Pa said we might's well," announced the washerwoman's small daughter. "But there wasn't anything in the picture but Towser," said Mrs. S., "and the baby's back." "Oh, we took out Towser," said the child. "Took out Towser!" exclaimed Mrs. S. "That must look queer—just the baby, all alone, with his back turned." "Oh, but you see, we turned him around and put a dress on him," was the answer.—*Leavenworth Times*.

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Developing Photographic Plates in Daylight

M. Demole, of Paris, brings out some new points as to the reversal of photographic images, and what has a great practical value is his method of developing a plate in daylight. The present researches were made starting with the, of course, well-known facts that a sensitive photographic plate submitted to the action of bichromate of potash has the property, when washed and dried, then exposed under a negative, of reproducing this negative by developing in daylight; also, that a long exposure changes the latent image, which is then found to be reversed on developing; further, that when the sensitive layer is used in connection with oxidizing substances, these facilitate the reversing of the image.

The writer proposes to observe the action of the low oxidizing substances on the latent image. When we plunge into a solution of potassium ferricyanide of one per cent. strength a plate which has received a luminous impression, rinse it and then develop it in a bath of hydroquinone and potash, with sulphite of soda, we find two remarkable results. First, that the plate

may have been much overexposed, without, however, hastening the development nor injuring the plate. The oxidizer acts here as a regulator of the time of exposure.

Second, if we develop by the white light of a candle, the plate will be a positive instead of a negative, as would have happened with red light. The reversing of the image takes place even after a very short exposure, but the image is sharper after a long exposure. Such phenomena resemble those of solarization. The same effect, as we recently stated, can be produced with certain bromide papers, adding five per cent. of glacial acetic acid. If the exposure is prolonged beyond a certain limit, the image undergoes a second reversal in the inverse sense.

Thus, with a Lumière plate exposed under a negative at 18 inches from an arc lamp, one second exposure will give a good positive plate, if we develop by red light. If we prolong the exposure and then oxidize the plate, we can expose from 1 to 170 seconds and always obtain a reversed plate, that is, a negative. At 180 seconds we first have a positive on developing, but this soon turns to a negative. Using 7 minutes exposure, the positive comes up and then is not modified much, while at 14 minutes' exposure the positive is fixed and indestructible, and here we realize the problem of developing by white light, which has been so much sought for.

If we suppose that the latent photographic image is formed of a sub-bromide of silver, Ag_2Br , coming from the decomposition of the bromide by light in presence of gelatine which can absorb the bromide, the sub-bromide of silver, which is a very unstable body, will easily be oxidized and given an oxy-bromide Ag-O-Br according to the equation $4 (\text{Ag}_2 \text{Br}) + 4 \text{H}_2\text{O} + 3 \text{O}_2 = 4 (\text{Ag-O-Br}) + 4 \text{AgOH} + 2 \text{H}_2\text{O}$.

This hypothetical oxy-bromide of silver, which is not easily reduced by the sole action of the developer, is more easily reduced by the combined action of the developer and white light, but is less promptly reduced when the surrounding silver bromide has not been altered by oxidation. Then the latent image is stable and the surrounding surface not being so, the image is reversed.—*The Optician*.

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Some Art "Whys"

By C. H. Clandy

BUT you have said often you were no artist!"

Guilty! But you don't have to be an artist to know something about art, any more than you have to be a scientist to know something about science, or a navigator because you know something of astronomy. And sometimes a man who knows a little of a subject can talk about it so the other fellow, who knows less, can learn what the first fellow knows, better than one knowing it all can talk. Because the man who knows a great deal about a subject frequently forges ahead and uses terms and makes explanations which are of themselves in need of being explained to the anxious student.

If you are not another fellow, knowing less about art than I do, and you will have to know very little indeed to come in that classification, better duck and skip under and let this story go for one more interesting.

When I was a small boy and went swimming, I learned that it didn't pay to step gingerly into the cold water and feel its chill creeping, creeping up my warm and quivering flesh, but that the gasp-producing plunge once over, the water wasn't half as cold as it felt at first. Therefore I am going to dive right into this subject with no further preamble.

Often in listening to an artist criticize a picture, you will hear that it "doesn't balance." If you are sufficiently curious to go to the trouble of looking up balance in an art text-book, you will find many pages devoted to the subject—what it is, and what it isn't, and why it should be striven for in a picture, etc. You will learn to "weigh" both sides of a picture and see if the large mass is near enough to the centre to balance the small mass on the opposite edge. You will be taught to compare the masses in a picture to weights on a "steelyard," and you will learn to carry a mental "steelyard" with you and put pictures on it, and praise and condemn and applaud, and will have a fine time say-

ing, "this is good" and "this is poor," and will generally enjoy your little gem of art knowledge a great deal. At least this is what will happen to some of you; others will be more conservative, let us hope. And all the time, if your mind is sufficiently analytical to go into the subject, and if you are sufficiently honest to question the say-so of the particular art Salon to whom you went for your information, you will wonder why in thunder you should compare masses in a picture to weight on a "steelyard"; will wonder why you were not told to compare them to birds on the wire, or a plate of doughnuts, or some other familiar and mundane object. *Why* should you want to have masses in a picture seem to balance? What difference does it make if they *don't* balance? You are taught that it is wrong; but *why* is it wrong?

Art is very, very old. The formulated rules of art—those man-made formulæ which students are taught to obey, and masters break with impunity—are the result of centuries of striving to represent with brush, with pencil, with chisel, with point, and now with lens and plate, something which shall speak to the mind of the looker of what it represents, and speak so strongly that the mind shall forget the obvious flat surface or cold white marble, and see only the scene or idea the artist saw as he painted or sculptured. There is no possibility of your ever mistaking a picture on the wall for a hole with a landscape showing through. You know it is a picture; your senses tell you it is, and no one, least of all the artist, would attempt to convince you to the contrary. But if, as you look at the picture, you see in your mind's eye what the artist saw as he made it, the picture is a successful picture, and both the maker and the spectator are pleased.

Just because the thing is a painting and not the real thing, it must be as inoffensive as possible in ways which do not concern its pictorial excellence. It must be fitly mounted and fitly lighted and hung. You couldn't admire the greatest masterpiece in the world if you saw it upside down, or if you had to bend your neck until it cracked to see it. You would be thinking only of the discomfort and not of the picture. And now to balance—for all this is not a wandering from the subject, but one leg of a coming comparison—the picture must arouse in the mind of the beholder no sensations inimical to his comprehension of the view as a whole. It must not make him uncomfortable—it must not produce a mental strain. If it is to carry its message of beauty or story, or whatever it may have to say, it will do so in spite of the fact that it is a flat canvas on a wall with a gold frame around it, and not because of it. Having all these unnatural surroundings and conditions to compete with, from the very fact that it is a painting and not a reality, it must have no internecine strife going on—within itself it must satisfy. And a picture which doesn't balance makes the mind of the man who looks uncomfortable. Why? Because the mind associates the feeling of ill balance with ill balance in other things, and in everything to which he can compare the ill balance of the picture is that feeling of uneasiness. If you see a telegraph pole leaning at a dangerous angle, and with no supports, you walk on the other side. You don't stand

under a ladder supporting a flimsy scaffold with a man and a paint pot on top. You don't watch with pleasure, but with curiosity, the man standing on a structural iron beam 100 feet in the air, and you always crawl to the high side of the boat careening before the breeze. Your whole life is a matter of balance—when you walk, when you run, when you sit, when you ride a horse or a bicycle, you must balance yourself or be balanced, or you are uncomfortable or about to be so. You unconsciously associate the idea of anything topheavy, or anything which doesn't balance, with discomfort. And when you see a picture which doesn't balance, it is not a comfortable picture to look at—it doesn't reach out and bid you enter and make yourself at home; it repels you by a nameless something you cannot put your finger on, but the repulsion is there, just the same. Your mind—that part of your mind which works ahead without any conscious volition on your part—immediately associates the preponderant masses on one side or at the top or bottom with something ill balanced—uncomfortable—to be remedied or gotten away from. I don't mean for an instant that your thinking mind—the mind with which you reason and command yourself—looks at the picture and says to you, "See here—there is something wrong there; it isn't straight;

it's topheavy; topheavy things remind me of uncomfortable things; therefore I am uncomfortable when I look at this picture." But I do mean to say that the same thing occurs without words in your unconscious or subconscious mind, and that for this reason, and for no other reason, a picture which is ill balanced is not a pleasing picture to the majority of people, whether they ever heard of "balance" from the artist's point of view or whether they can recognize its lack in the picture by name or not.

The whole question is one of psychology. Pictures and picture seeing is entirely a matter of the eye and the mind—some sentimentalists will say of the heart, too—and not at all a matter of any other senses. The blind do not enjoy pictures, and idiots cannot. The ignorant man may,—and "I don't know art, but I know what I like," from an educated person will often spring from an inherent aversion to what is, artistically, not good, provided it isn't too complicated. Just as in literature, or music, there is an educated appreciation to be had of art and of pictures, and the more you know, the more you enjoy what is good, but, *per contra*, the more you dislike what is bad. And all that you learn, either in books or music or pictures, is based upon some such sound principal as the one here outlined,—the fact that if a picture is handicapped with calling up unpleasant emotions in the mind it hasn't its chance to carry

Honorable Mention
Old Oaken Bucket Contest

G. H. CARTER
ORANGE, MASS.

its message. By the use of the terms "emotion" and "discomfort" I mean those slight feelings in the mind which dictate "I like that" or "that doesn't please me." I do not, of course, mean that a picture off balance would produce the same sort of discomfort that a flea or a pair of ripped trousers would give rise to.

To revert, in closing, for a moment, you will, maybe, want to know how it is, if balance is so essential, that a master of art can produce an unbalanced picture that is still pleasing. In answer I would refer you to a poet—a real poet—any one whose verses speak to you,—to your feeling and understanding. You may very probably find a dozen errors in his verse from the verse makers' standpoint, but the thought carries through the errors. If you or I make verse, we must make it perfect in construction, since we haven't the poet's feeling to put in. It must be good in one way if it cannot be in another. You may be an expert carver in wood and a poor carpenter. You may make a beautiful mantelpiece which is beautiful because of the carving, but which is badly put together and of no use as a mantel. People will admire it because of the work you have done well and pass by the craftsmanship as the less important. On the other hand, the same people would admire my plain carpentry but laugh should I carve. The musician writes music. If it is absolutely correct according to the rules of the art of music, we admire it and study it—as in much of the music of Bach. But we go to Chopin or Wagner or Beethoven or Grieg for the music that makes us laugh or cry, and if we strike an unfinished symphony, Schubert's beautiful B Minor for instance, we enjoy what is there and sigh for the rest; if some less talented composer writes a symphony it must be all there and musically correct before we will even consider it as music.

So with the artist,—you or I, in making a picture, must make it, as far as in us lies, conform to the rules of art as we may learn them; content to be good craftsmen and trusting for appreciation that what we do is good as far as it goes. The painter who is really an artist, who has the tale to tell and the hand to tell it, can afford, if he wishes, to ignore his own rules, secure that his thought and his genius will shine through and over and beyond and all about his transgressions of the law.

Yet he had to know the law to break it. If you who read this have art talent or genius, never imagine that you can best express it in your own untutored way—you, too, must know the rules before you break them, even as those who have been before you have done. And as the rules are many and hard to learn one should step very softly and think long before walking forth with heavy step and "I am an artist" write large upon your brow! But "I am a craftsman" you may say if work and study have taught you what your craft may be,—and if you learn, first balance, and then all the rest of two score and then some rules which hedge about the making of pictures, there is no reason, granting always that you have the necessary spark, but what you, too, may be an artist and use the camera as a tool to make real pictures, as a small, growing, and devoted band of men and women, scattered wide the world over, are doing to-day.

Retouching

By Felix Raymer



MEMORY may be faulty, but I do not remember having talked to the readers of *THE CAMERA* on the subject of retouching; and today, after having looked over a number of prints sent me by an amateur friend, who was good enough to refer to some of my articles which have appeared in previous issues of *THE CAMERA* in very complimentary terms, the thought came to me that perhaps a few suggestions from an old retoucher would not be out of place. In my early career as a photographer I was a retoucher, and many were the negatives I ruined by "overdoing it." This is a fault found in nearly every retoucher, and it takes long years of practice to overcome the tendency to overwork the negative. From a personal observation and experience, I believe most of the overwork is due to beginning wrong. I mean the beginning work on each negative. If the retoucher will adopt a system in his work as the operator does in his lighting, and allow that system to be in perfect harmony with the operator's system of lighting, I am confident there will be no criticism of his work from the point of overdoing it. The few suggestions I expect to offer in this article are more particularly for beginners and amateurs. I am not one of the operators who advocate the idea of doing away with retouching, for I am a firm believer in making the pictures of our friends and customers as pretty as possible, and the art of retouching is a means toward that end. I have seen hundreds of pictures made by amateurs that would have been exquisite had they been judiciously retouched. As a rule, the amateur is satisfied with the working and developing of his negative, and never gives the retouching of it a moment's thought. This is often a serious mistake. It is an *art* to idealize nature, and retouching places this power within the hands of the amateur and professional alike. Another feature of the case is that the knowledge of retouching gives one a better understanding of lighting, and the operator becomes a better operator, for he notices every little half-tone and shadow, bearing in mind that every unnecessary one means so much extra work for him to remove or modify in the retouching.

The retoucher should know just where the highlights occur in every effect of light. He should know where every half-tone should be; and the same with the shadows. Until he does know these things he cannot do good *modeling*, and modeling is the chief consideration in retouching. When he looks through a negative he should be able to say at a glance: This is a "broad effect" or a "Rembrandt effect" or "line," or any other effect it might be, and know just where each highlight should appear for that effect of lighting. If by some chance the operator failed to secure the highlights as they should appear, it is for the retoucher to place them there; this is called modeling.

In our lessons on lighting, which we have had for many years, there has been pointed out, several times, the correct location of every highlight, for every effect of light. For instance, "plain lighting": the highest light should



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Photo made at
Buffalo, N. Y.

HOSEA TUENING SOMERSAULT

Graflex Camera
Vetox Print



fall on the forehead, over the eye next to the light, the next on the nose, then on the lips, the chin, and a touch of light on the shadow side of the face. By a glance at the illustration used in connection with this article a specimen of this lighting will be seen, with the exception that the highest light, which should be on the forehead, is not there, due to the hat shading the forehead. In this case the judgment of the retoucher would teach him that it was nothing but *nature* that this highlight should not show, and to build it up until it did show would be contrary to *nature*, therefore not artistic. He would take the second highest light, which falls on the nose, and if it showed a lack of strength through the face having too much color at that particular part, he would build it up until it stood up in good relief. The good retoucher strikes square in the centre of every highlight and allows his stroke to lighten as it goes toward the edges of the highlight, giving a soft blending to all of the highlights. His next point of work in our picture would be on the cheek, just under the eye on the light side of the face, and he would strike good and hard right in the centre of the highlight, making the stroke lighter and shorter as he rounded out the cheek. Next comes the light on the upper lip, then the chin, and finally the shadow cheek. By following this method the retoucher is staying in close harmony with the operator, and in doing so will be carrying out his intentions when he made the lighting. The operator takes great pains to accentuate certain parts of the face by placing highlights on them, and then, to carry out his idea still further, he focuses on these parts, making them the sharpest points of the picture. Now, if harmony is to be maintained in the result, the retoucher must take up the work where the operator leaves off, and continue his plan on through the entire process. It is the retoucher who undertakes to change the work of the operator, making it different, and who does too much work on his negative. Any amateur, with a few trials, can better his work by following the suggestions made. But, first, be wise and know where every highlight should be, and then take them in their proper order, the highest first and the lowest last.



A Home-Made Print Washer

By H. Cormack

FOR several years I have been a regular reader of THE CAMERA and have found much in its pages to help me with my daily work under the skylight. I am especially interested in all home-made appliances. I believe in making everything that can be made (except money). At present I am making a living with a home-made camera, and, "if I remember right," it was in THE CAMERA that I found the instructions how to make a bellows. Now, if any struggling brother has need of a print washer, one that will wash thoroughly and cost less than anything in that line now on the market, let him read this: Procure a galvanized iron pan, the kind that goes under refrigerators. The one I am using measures 15½ inches across by 5 inches deep, washes all sizes up to 8x10. Often there are from five to six

dozen cabinet prints washing at once, and when I say washing I don't mean soaking in water. Get also a strip of galvanized iron, about 15 inches long by $5\frac{1}{4}$ inches wide, the extra quarter is to turn back and hammer down to leave a smooth edge. Better have your plumber do this for you and for the soldering; he has the proper tools, and you want a good job and no rough edges to scratch your fingers or the prints. This strip and how it is cut and curved are shown in the accompanying print. There should be about one and one-quarter inches space between the shield and pan at the widest end, or just room for the hose and nozzle you intend to use. The nozzle may be made from any small brass tube. Plug one end with lead, then drill a very small hole through the centre. Right under the nozzle in the picture you will notice another tube; this is the overflow pipe. Lead pipe is the best, as there is quite a sharp bend in it where it passes through a hole in the pan, about half

an inch from the top and about half way around the space between the shield and pan. This hole should be cut before the shield is put in place. The siphon should extend about one-inch below the bottom of pan, which, of course, has been provided with three legs to keep it up off the sink. Better make the siphon fast on the outside with a loop and a little solder. It will readily be seen how prints washed in this washer must be washed thoroughly, as they are continually kept revolving in a whirling stream of clear water while all hypo and other sediment is being drawn off from the bottom. Another good feature of this washer is the comparatively small amount of water wasted—a very important point where water is sold at so much per cubic foot. Give the inside a good coat of white paint before using, and I would suggest that you fill the pan about half full from the faucet every time before you attach the hose. The washing box here shown has been in use almost daily for about three years, and will continue on duty until some one gets up something to beat it.

Is It Profitable to Use Developing Solutions a Second Time?



ON reading this heading two answers immediately suggested themselves to my mind, and as it is always well to look at both sides of a question I give both views here, that the reader may profit by the comparison.

The question, for the purpose of argument, may be divided thus: affirmative, economy in chemicals; and negative, economy in pictures.

If you are a happy-go-lucky amateur of the snap-shot class, content to shoot away dozen after dozen of plates, developing them all in the same strength developer and are satisfied to get an occasional good negative and reject the rest, it is sheer waste to throw away three or four ounces of developer in which you have developed one 4x5 plate, for its developing power is by no means exhausted; to be sure, if you use it again it will probably show a tendency to bubble and cause pinholes, but this can be avoided by brushing the plate with a camel's-hair brush or a tuft of absorbent cotton while in the developer. An amateur acquaintance told me the other day that he had developed twenty 4x5 plates with one little tube of developer which I had given him to try and got *all good negatives*. Now, this was not due to any extraordinary virtue in the developer, nor to any particular care or knowledge on his part; but fortunately for him, all the exposures were about right (they were all seashore snap-shots); if they had been over- or undertimed and consequently made poor negatives they would simply have been classed as failures and rejected as such.

Unfortunately for the advancement of the art of photography, the above would apply to a large percentage of amateur photographers.

Now, on the other hand, if you are really a thinking worker and strive to obtain the very best results on every plate you expose, you will naturally use the tentative method of developing, viz., suiting the proportions of the developer to the exposure and subject. Let me emphasize this point. The subject, if you have two exposures, both about correct, but one is an open marine view and the other an exposure made in the deep shadow of the woods, and if you develop these in the same strength and proportion of developer you will probably get in your marine view a dull gray sky and but little contrast between sky and water, while in your landscape you will have chalky white patches of highlight and charcoal shadows. To develop these properly your landscape will require more alkali, more water and less of the developing agent than the marine, so that if you feel your way along in developing your plate, adding a little more alkali to get more detail in the shadows or a little more Pyro (or whatever agent you use) to get more density, or more water to get a softer result, by the time you have finished one plate your developer will be of such proportions as to be unfit for any other exposure you may have to develop, so that the safest and therefore the most economical way is to throw it out and start afresh.

Another argument against the repeated use of developing solutions is to cite the case of the professional portrait photographer (to whom "economy is wealth"), who, although his exposures run almost perfectly uniform, generally uses fresh developer for each plate and consequently obtains uniform, even printing negatives.

"A STUDY IN POSE AND LIGHTING"

BY S. ELWIN NEMME

**In this picture the sitter was placed slightly above and very near a small concentrated light—
a portion of uncovered glass. A little top light was also employed, but was hardly necessary.**

The Lighting of Figure Subjects and Portraits

IN my recent notes contributed to the *Photographic News* on the photography of the figure, the question of lighting received but scant attention. As undoubtedly the position and quantity of the light employed play an important part in the production of figure studies, the following notes should prove of interest to those who do much figure or portrait work.

For those lucky enough to procure a properly fitted studio for their work, I append the following table of lighting effects. The same principles, of course, apply to the lighting obtained in an ordinary room—with this difference: In the studio the light is moved to suit the sitter, but in an ordinary room the sitter must be moved to suit the lighting required.

TABLE OF DIFFERENT LIGHTS AND EFFECT OBTAINED BY USING THEM.

TOP BACK LIGHT.

This light is obtained by uncovering the skylight directly above and behind the sitter, the rest of the studio windows being covered. This lighting will give rather a hard outline to the highlights and much strong shadow. It will be found a useful light to employ for reclining positions, and is the light used for the majority of my own studies. It might also be used for the back view of a standing model, but will probably give too much shadow on the legs. When this light is employed it will be necessary to raise the model's head toward the skylight if any light is required on the face.

TOP FRONT LIGHT.

The uncovered portion of the skylight must be in front of the sitter to produce this light, which is very flat, and shows the accidental defects of the model to an alarming degree. The flesh tones given are much affected by color; it is, therefore, unwise to employ this lighting for nude studies. It may, however, be successfully used in conjunction with top back or side light, having a softening effect on the shadows, and in this way serving the purpose of a reflector.

SIDE LIGHT (BACK).

Light coming from slightly behind the sitter, and on or below the level of the head. This light is used for so-called Rembrandt effects, giving very strong contrasts of light and shade. It can only be successfully employed when the model is turned towards the source of light, the head being quite profile. This light, however, may be employed in conjunction with top, back or front light.

SIDE LIGHT (FRONT).

Light coming from a level a few feet in front of the sitter, and on or below the level of the head. Chiefly employed when the head of the sitter is turned away from the source of light, a light background being used.

When any desired effect of lighting is required, all that need be remembered is—

That back top light gives large and strong shadows in a downward direction.

That side light (back) gives large and strong shadows on the side of the sitter, away from the source of light.

Side light (front) gives a smaller portion of shadow on the figure.

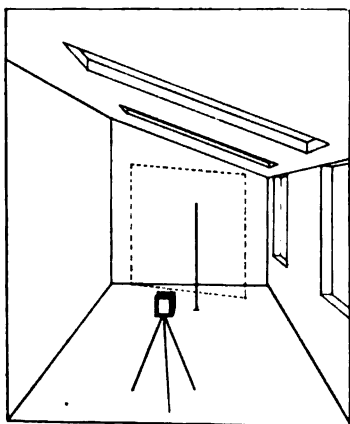
Top front light gives practically no shadows at all.

When working in an ordinary room we can obtain only back and front side light. Of the two, the front side light will be the most serviceable, especially when a light background is used, with the model turned away from the window. No reflector should be required if an ample exposure is given.

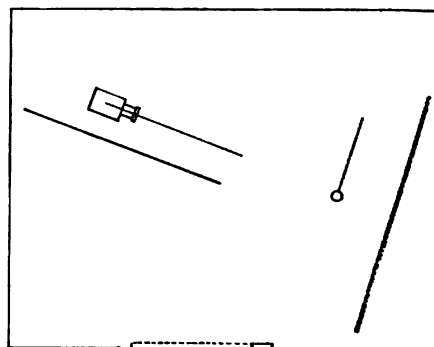
There are, of course, other methods of lighting, such as the light employed in the illustration on page 412. In this case the sitter is placed above and very near a small portion of light, giving a fire-light or candle-light effect. This form of lighting is especially easy to produce in an ordinary room.

If the above notes are carefully read, it should prove a useful guide to photographic portrait lighting of all kinds, although it must be understood that the principles laid down are only general ones. Any lighting used is a matter for individual arrangement according to the studio or room at the disposal of the photographer, but if possible a room with a skylight, however small it may be, should be selected.

The amateur unable to obtain a studio need not despair about the lighting of his subjects, for there is no doubt that the uncommon lighting is the one to employ. The figure study must not be a stereotyped production, and there is always the probability of discovering a really fine arrangement of light and shade when experimenting in a room not adapted for the usual photographic subjects.



A—Studio Lighting with Top Back Light, Top Front Light, Side Back and Side Front Lights.



B—Proposed Method of Arrangements of Camera, etc., when Working in an Ordinary Room with One Window.

Simplicity of Light and Shade



HE achievement of peculiarities of illumination is a temptation to many portraitists, but it is in accordance with taste to present the head in a simplicity of illumination and not to have recourse to a bizarre method of lighting to attract attention by its mere novelty.

Unusual or unsuspected effects of light and shadow should be sparingly introduced, and are not to be recommended to the amateur unless his ability should enable him to take his place beside the professional artist who has devoted his life to the highest purposes of the fine arts.

But the beginner and, in fact, even the more advanced will do well to confine attention and study to the simpler and more easily accounted for modes of illumination, in which he will be countenanced by most, if not all, of the finest works of art.

The public, it is true, is apt to be caught by the novelty of fantastic conceits and far-fetched and fanciful effects and contrasts of different kinds of light, such as (and we have seen such) electric flashlight and daylight all in the one view. But simplicity of light and shadow by reason of its greater apparent truth will always command a more lasting attention.

It assists to produce a grandeur, tends to save grace from lapsing into affectation, displays the charms of beauty and confers a dignity upon the subject depicted.

The orchard,

How dear to my heart are the scenes of my childhood
When fond recollection presents them to view;

The deep-tangled wildwood,

The meadow,

The wide-spreading pond

The mill that stood by it,

The bridge.

The rock where the cataract fell.

The cot of my father

The dairy-house by it,

The old oaken bucket

How dear to this heart are the scenes of my childhood,

When fond recollection recalls them to view;

The orchard,

The meadow,

And every loved spot which my infancy knew;

The deep-tangled wildwood.

The wide-spreading pond and the mill which stood by it,

The bridge.

The cot of my father, the dairy-house nigh it,

And the rock where the cataract fell.



And e'en the rude bucket which hung in the well

The old osken bucket—the iron-bound bucket—
The moss-cover'd bucket which hung in the well.





The orchard.

The meadow.

Deep-tangled wildwood.

Loved spot.

Wide-spreading pond.

The bridge.

The mill.

The rock where the cataract fell.

The cot of my father.

The old oaken bucket that hung in the well.

Curious Water Reflections



EVERYONE is familiar with the effect produced in a photograph taken against the sun and over the sea when the sun is rather low down. The result is a kind of lane of dazzling white specks, extending from the foreground to the horizon, and if these specks are closely examined with a magnifier very varied effects can be observed. If we look upon the specks as images of the sun reflected from various water facets existing among the ripples, numerous problems present themselves and are well worth study. In a great number of cases the specks are rhomboidal in shape, and this is the form that we have generally noticed and usually expect to see. Within the last few days, however, we have seen some photographs in which the specks are of quite a different nature. In the mid-distance they are circles with interior caustics. In other words, they most distinctly show astigmatic coma. In the foreground a very exaggerated kind of astigmatic coma is produced, for the caustics develop long wings, and the effect is very much that of a number of white collar studs floating on the water. The first suggestion will probably be that the astigmatism must be caused by the lens, but this happens to be a well-corrected anastigmat that under ordinary tests will not show anything like the amount of astigmatism obvious in the specks. Moreover, other photographs showing rhomboidal specks without any astigmatic effects have been produced with ordinary rectilinears capable of giving any amount of astigmatism. The inference is that the lens has nothing, or practically nothing, to do with the matter, and that the solution of the problem is to be found in the form of the water facets. This suggests that in the study of these specks, or, rather, of their photographs, we can learn a good deal with regard to the formation of water ripples and facets. Without photography they cannot well be examined at all, so possibly there is a new field of research open to photographers. It is, however, equally possible that some one has already exhausted the field, but we are not aware of any work done on these lines. The astigmatic effects admit of fairly easy explanation if we make the assumption that the water facets are convex and so form little convex mirrors: but if this explanation is the true one, then it would appear that the water formation must have been unusual, for the rhomboidal specks, which are so much more common, cannot be explained in the same way. They suggest the existence of either plane or concave facets of a rhomboidal shape. Up till now we have not given much attention to the subject, as we have generally assumed that specks of light of a more or less rhomboidal form were always to be found. The perfectly formed little aberration images with clearly defined caustics are quite new to us, hence it is quite likely that other forms exist that we have never noticed. If any readers have negatives showing such reflections we shall be very glad if they will kindly let us have prints for examination. We shall then be able later on to report on the effects observed. It is unsafe to speculate on a few results alone, for safety lies only in a multitude of observations.—*British Journal of Photography*.

For Those Who Can Never Know or See a Photograph

By C. H. Claudy



FEW days ago I sent to the editor of this magazine a few half-tone pictures of the Home for Blind Babies, in Brooklyn, and some photographs of these helpless children at play and at work. I didn't ask him for anything or even suggest anything. Came the reply: "Claudy, what do you want; write-up, contribution, or what?"

So I told him about the blind babies; how the International Sunshine Society has charge of this home; how the home takes in the blind babies of the poor and teaches them both to work and play; how the little minds, which would otherwise remain undeveloped and stagnant, in the neglect that must come to the blind children of those too poor to properly care for them, blossom out and grow; and the little bodies, otherwise to remain undeveloped and undersized, the prey of sickness and misery, for lack of exercise, fatten and broaden and become happy and healthy tenements for the minds of the little blind children; how the home has a mortgage of \$10,000, which, if it isn't paid, will take their home from these helpless little ones; how the International Sunshine Society is doing all it can do, in every way it can do it, and how those of us who have children who, but for the grace of God, might be blind also, must spare a little from our sufficiency to help these children who can neither help themselves nor be helped by their parents; all this I told him, and as much more as I could think of. And to-day he sends me a bunch of checks, from himself, from THE CAMERA, from the *Bulletin*, from his office and working

"WHAT ARE THE WILD WAVES SAYING?"

(Two blind children listening to the music of the sea.)

force, and from two lucky salesmen who were in the office and from whom he obtained contributions, and from the editors of the *Bulletin*. And besides that practical help, he tells me to write a story for both his papers and send him pictures, and he will publish them, and so give you a chance to help, too.

No, we are not begging. The International Sunshine Society has many charities, and no one realizes better than its president, Mrs. Cynthia Westover Alden, that no man of moderate means can give to all the charities or can be expected to desert one for another. But there are many people who have no special charity in which they are interested to the exclusion of all others. There are many who are interested in others, who cannot look into the eyes of their own brightly seeing children and think of those other waifs, blind from birth,

LITTLE RACHEL (BLIND) PLAYING "STATUE OF LIBERTY" AFTER HAVING STUDIED THE LESSON

or more pitiful, blind from accident, who can never see anything—pictures, or books, or landscapes—and not want to dig right down into their pockets and send something to help.

Maybe you are one of these. If you are, send it—whatever you can afford—and it matters not whether it is ten cents in stamps or a hundred dollars, to Mrs. Cynthia Westover Alden, International Sunshine Society, 96 Fifth avenue, New York city, or to Frank V. Chambers, editor of *THE CAMERA*, 608 Sansom street, Philadelphia, Pa., or to C. H. Claudy, 523 Tenth street, N. W., Washington, D. C.

Please remember and note carefully: Neither the society, Mr. Chambers, *THE CAMERA* nor I are begging. We are all of us offering you an opportunity to help if you want to. If you don't want to, we are all of us ready to believe that there are excellent reasons for your action, and, as the lecturer on the rural stage says, "We thank you for your kind attention."



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NOVEMBER, 1907

Competition No. 104

THE OLD OAKEN BUCKET

How dear to this heart are the scenes of
my childhood,

When fond recollection recalls them to
view;

The orchard, the meadow, the deep-tangled
wildwood,

And every loved spot which my infancy
knew;

The wide-spreading pond and the mill
which stood by it,

The bridge, and the rock where the cat-
aract fell;

The cot of my father, the dairy-house nigh
it,

And e'en the rude bucket which hung in
the well.

The old oaken bucket—the iron-bound
bucket—

The moss-cover'd bucket which hung in the
well.

AWARDS.

First prize, \$20, "Edinol"—W. S. Lud-
den, Schenectady, N. Y.

Second prize, \$10, "706"—F. Warren
Friar, Hotel Walton, Philadelphia.

Third prize, \$5, "S"—James F. Fisher,
Williamsport, Pa.

Honorable Mention—Harry R. Hippler,
Philadelphia; G. H. Carter, Orange, Mass.;
George H. Webb, Columbiana, O.

We certainly congratulate the thirty-one
contestants who entered our competition
No. 104 for the general excellence of the
work submitted, and for the conception, by
photography of the subject-matter of the
poem being portrayed in such a clear man-
ner.

To judge this contest was the hardest
thing in our experience, and we asked sev-
eral art friends to assist; but no decision
could be reached, as we desired a perfectly
unbiased and uninfluenced decision. Unfor-
tunately, as we were about to decide, one
of the judges said that he knew one of
the contestants, as he had seen the work
before—hence, after half a day's labor, no
awards were made on that account.

The members of the Lens and Brush
Club of Philadelphia were then asked to
pass judgment upon the pictures, and the
eight gentlemen appointed upon the jury
made the awards, as noted above, on Oc-
tober 1, 1907.

This month we announce Competition
No. 115, based upon the poem, entitled
"Mother." But six prints will be needed
to describe this, and the prizes have been
increased. We hope to have equal success
with our second effort as we did with the
"Old Oaken Bucket."

Many of the contestants sent in letters
describing their experience, and the one
printed below shows the difficulties of one
man, who certainly had the pluck to stick
at the thing, but was not so fortunate as
his lucky competitors.

✽

EDITOR OF THE CAMERA.

Dear sir: This letter will reach you ob-
viously after the judges have passed upon
the "Old Oaken Bucket" contest, and so I
trust I may be permitted a few remarks
on the subject, whether my pictures win or
lose, and I have purposely refrained from
saying anything that would reach you prior
to the closing time of the contest.

When you first announced this contest I
thought it a good thing, inasmuch as it
would be setting a definite goal to which
one might work up, and I thought your
remarks about photographers giving you
sufficient encouragement to induce similar
contests for the future were quite right
and appropriate. I had what I thought

were several plates that would fit the subject splendidly, until I read the verse over several times, and then drew upon my imagination for what I would expect to see in reality for the several objects. My mind went back to my childhood days, when I spent three years on a farm, in the neighborhood of which several of those very things were found, and I reasoned that there ought not be any great difficulty in finding the various objects. When I started out to find them, however, I received shocks that almost induced me to give up chasing the game. For example, I thought there would be no great difficulty in finding an old-fashioned mill, driven by the old-fashioned waterwheel, but I think I have had my neighbors and townspeople almost wild with haunting their memories to tell me where such a mill exists, and some four or five assured me that I would find one at so-and-so; and I went, losing time and incurring expenses to no less than five different places, and when I got there the mills *had been there years ago*, but now—in ruins or gone.

So with wells having an "old oaken bucket." The kind of well I wanted was one of the kind with a long pole on a pivot, with a bucket at one end and weighted at the other. I saw such an one in Nova Scotia, as I was riding by in the train, at quite a distance away; but I could not stop to get it. The next best I could find was, or were, the two which I photographed and entered, and these two very closely illustrate the much-famed Evangeline Well, in Acadia, Nova Scotia. I simply could not find a mill such as I wanted, nor just such a well as I wanted, and so I used what I could find. I think, all told, that my efforts have cost me all of a week's time and all of \$10 expense, aside from the plates, films and photo supplies, and yet I am not satisfied with all of my pictures on the subject. Since, therefore, having entered into this thing, I feel like turning your remarks around, and saying, it does not seem to me to be a matter of photographers giving you sufficient encouragement as it does of the possibilities of their getting the required views to fit the case.

That, at least, is my experience, and I may say that, even in my efforts, the result

is thus: The orchard I got about five miles from my present home, and so, also, the wells. The meadow I got within two miles of my home. The rock where the cataract fell I got in my boyhood's home, down in Maryland, both views. The deep-tangled wildwood, as also one orchard, I got near Chatham, N. Y. The wide-spreading pond and the old stone bridge I got over near Worcester, Mass. The cottages I got about five miles from here. The bridge I got near Yarmouth, Nova Scotia. Another deep-tangled wildwood I got near Lake Pontosac, Mass. The dairy house I got down near Philadelphia. And so, I tramped for miles in various places, hired rigs to drive to many other places, and in most of them I failed to find just what I wanted. My relatives and friends all say that I was getting pretty nearly daffy, and getting them likewise, in my efforts to find what I wanted. In one place in a tramp of several miles through a strange part of the country I was attacked by dogs and had to defend myself with rocks. In other places I have climbed gulches and stony hillsides to get certain views, only to find that I was wrongly informed. I don't know what sort of experience others have had in their quest for these views, but I know that mine were funny, aggravating, and very trying all through, and if I had it to do over again, I simply would not do it. The end does not justify all that I went through to accomplish my purpose. I may add this, however—I am not content. I have an excellent collection of views to fit that poem, and I shall get the rest yet just as I want them, and you can wager your last dollar that before I quit it I shall have the finest possible set of pictures to accurately fit that poem, and when I get them I shall treasure them as a success *par excellence*. They will never be entered, either, in a prize contest, for they will represent to me much more than the value of any prize offered for such a set of pictures. The few views I got for this verse when I laid them out and examined them made me hungry for my childhood home, wishing if I could just go there once more and ramble around where I used to, and see things there *just as I saw them in my childhood*. For that recollection I am thankful that I entered the contest. If I have lost or won, it matters not now. It is likely that it may turn out a benefit to me, and at any rate, though it has cost me much time and effort and expense, and though I would not repeat it, yet I am not regretting it. My best wishes to the winner, whoever he may be. Very truly yours,

F. P. Lorz.

All questions relating to technical matters, processes, working instructions, etc., are referred to competent experts in the particular subject referred to, and the utmost is done to insure reliable and practical answers being given.

Correspondents are requested to first state their case and then number each question; they should also write on one side only of the paper, and enclose correct name and address—not necessarily for publication. No attention will be paid to anonymous communications or those only signed with initials.

We do our best in all cases to publish the replies in our next issue following the receipt of the inquiry, but cannot absolutely guarantee this.

All inquiries should be addressed to THE CAMERA, 606-608 Sanson Street, Philadelphia.

No questions answered by post. No prints criticised.

PER CENT. SOLUTION.—How can I make up a 5% solution, and what rule is to be followed for making up other per cent. solutions?—W. P. B.

Dissolve 5 parts of the solid in 90 parts of water; then make the bulk up to 100. This is generally understood as a 5% solution. The other per cents. can be made the same way.

PLATE SPEEDS.—In using Cramer Crown plates what would be the exposure on medium Iso. and on the Banner X, assuming that one second is normal exposure on the Crown?—W. D. G.

If one second is normal on the Crown plate, the Banner X would require $1\frac{1}{2}$ seconds and the Medium Isochromatic 2 seconds.

YELLOW NEGATIVES.—Some negatives made a year ago are turning quite yellow. They give good prints, hard, but very slow in printing. Can the yellowness be removed without destroying the negative?—M. T.

Try immersion in the following clearing bath for ten to fifteen minutes:

Protosulphate of Iron.....150 gm. 3 ozs.
Alum 50 gm. 1 oz.
Citric Acid 50 gm. 1 oz.
Water1,000 c.c. 16 oz.

Then wash in clean water.

ACETONESULPHITE.—In using acetonesulphite, what proportion should be used instead of sodium sulphite (crystals) and potassium metabisulphite?—H. J. G.

1 grain acetonesulphite replaces 6 grains sodium sulphite (crystals); 3 grains acetonesulphite replace 2 grains potassium metabisulphite.

GLYCIN DEVELOPER.—Please give formula for glycin developer, two-solution (1) for ordinary development; (2) for tank development. (3) Will glycin keep well in solution?—B.

A.—Sodium Sulphite (crys.) 120 grs.
Water 2 ozs.
Glycin 40 grs.
Carbonate of Potash ... 15 grs.

B.—Carbonate of Potash100 grs.
Water 2 ozs.

(1) Mix one part of A with two parts B.
(2) Dilute the ordinary developer with four to five times its bulk of water. (3) Yes, if kept in well-stoppered bottles.

INTENSIFYING PLATINUM PRINTS.—What is the best method of intensifying platinum prints?—H. W. C.

There are several methods of intensification with silver, gold or platinum. For the first, make up a solution of:

Hydroquinone 2 grs.
Citric Acid20 grs.
Distilled Water 1 oz.

Place the fixed and well-washed print in a clean dish, flood with the above, and then pour off the solution and add to every ounce of it 10 drops of a 10 per cent. solution of Silver Nitrate, and apply to the print. The mixture soon turns thick, but the print rapidly intensifies, and should then be washed. Hübl's intensifier is:

A.—Sodium Formate48 grs.
Water 1 oz.
B.—Platinum Perchloride 10 gr.
Water 1 oz.

For use add 1 ounce of water, 15 drops of No. 1 and 15 drops of No. 2. When intensification has proceeded far enough wash well and dry. Dollond's process is to place the wet print face up on a sheet of glass, cover with glycerine, then brush over it a solution of:

Chloride of Gold 1 gr.
Water 1 dr.

And, when dark enough, wash, and then treat with:

A.—Metol50 grs.
Sodium Sulphite 1 oz.
Water10 ozs.
B.—Potassium Carbonate 1 oz.
Water10 ozs.

Mix in equal parts; then wash thoroughly.

The Autochrome Plate

Compiled from various foreign sources

By GEORGE W. BETZ, M. D.

The principle of the new process in natural colors, or rather the new modification of Joly's old process, as exemplified in the Autochrome plates lately put upon the market by the Lumière brothers, is by this time probably known to every one at all interested in the latest advances in photography. About 1892 MacDonough brought out his method of producing pictures in the colors of nature by means of a finely ruled screen, on which were drawn the three primary colors in extremely fine alternating lines. This screen was placed directly in front of the plate in the camera and the exposure made through it. The lines were about $1/250$ of an inch wide. A positive from the negative taken through the color filter and brought into register with the latter reproduced the colors with great exactness.

If we follow up the formation of the picture, say at some one color—red, for instance—it will be readily understood. The red rays, passing freely through the red lines of the filter, produce a developable deposit on the plate at that point, and this in the positive will be clear glass, which, when again brought into register with the filter plate, will freely permit of the passage of light through the red line, and so give the sensation of original color; while the neighboring green and blue lines will be obscured by the deposit on the positive, the result of the clear glass in the negative, the red rays not having been able to penetrate those colors.

Naturally, the striped effect of the finished picture seriously mars its effectiveness, to say nothing of the extreme difficulty of securing exact register.

What Joly and MacDonough accomplished by means of their filters placed in front of the plate, the Lumière brothers now seek to obtain in the plate itself. They incorporate in each plate a color film laid out, not in lines, but consisting of colored points. These tiny colored dots combine to form white.

This same idea of combining the three

primary radiations to form white is also the basis of the Joly process, but with this important difference, in the Joly method, the colors, modified each more or less by its corresponding positive, are combined on the screen, while in the Autochrome plates they are already combined more or less perfectly on the plate.

Joly pictures show red because the red illuminated positive permits of the undisturbed passage of the red rays; the green and blue positives, on the other hand, stopping all of their respective colors. The screen, therefore, shows red a clear, shining color, uninfluenced by any disturbing factors. Not so the Autochrome plate. In it red; green and blue elements are equally distributed throughout the film. Red objects can only appear red when the neighboring green and blue filters present in the image of the object are eliminated; that is, covered by a silver deposit and made opaque. The brightest red, therefore, is one part red and two parts black, causing a considerable diminution of brilliancy.

How the color filter film of the Autochrome is made has been described before in these pages. The necessity of avoiding clear glass spaces between the grains of color led to their being filled with a black powder in the earlier makes of the plate. This, too, helped to dull and darken, for the above reasons, the already dull colors. Later methods consisted of so pressing or rolling the grains as to cause them to spread out in polygonal shape, and come into absolute contact with each other at all points.

To the naked eye the plates give the impression of a slightly reddish gray, not a pure gray or white.

Under a microscope fitted with an oil-immersion lens, and high-power eyepiece, the film is seen to consist of irregular sized grains of color never overlapping each other, and with the interspaces filled with some black mass, probably lampblack or graphite. Occasionally particles of this black substance are also seen lying on the grains themselves. The colored grains are not always placed so that a red, a green and a blue are in juxtaposition; frequently little piles of eight or ten grains of the same color are seen. Seven different counts

of the number of grains of each color in the field of view gave the following results:

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|-------------|----|----|----|----|----|----|----|
| Red | 19 | 14 | 16 | 12 | 15 | 12 | 13 |
| Green | 23 | 24 | 26 | 25 | 23 | 20 | 24 |
| Blue | 16 | 12 | 10 | 12 | 12 | 20 | 17 |

Or, reduced to percentages:

Red, green, blue: 28, 45, 27.

The excess of green may be out of consideration of the imperfect sensibility to green of the panchromatic emulsion employed. The structure of the starch used for the granules is still distinct. In general the film shows a regular striping or lining, due perhaps to the method of applying the grains. On this color grain film lies the emulsion. This is of very fine grain, rich in silver, and with very little gelatine. Its sensitiveness is relatively low, being about 40-50 times slower than ordinary fast dry plates.

All operations, both chemical and physical, such as intensification, washing, etc., are, on account of the thinness of the film, very easily carried out; but at the same time this very delicateness makes it necessary to use the greatest caution in handling. Color is reproduced by the Autochrome plate in a fairly satisfactory manner. The simultaneous rendition of very different intense colors, as, for instance, that of a dark green and a bright red, is not so favorable. In fact, it is advisable to avoid striking contrasts of lighting or color. Sunlit landscapes, flowers and portraits in the open air come out best. In general one should choose objects with large uniform areas of color, and avoid masses of confusing details or the use of lenses of short focus.

◆

Mr. J. A. Hoerter, for the last seven years associated with Messrs. Burke & James, Chicago, has severed his connection with that firm and has established himself at Louisville, Ky., under the firm name of Hoerter Supply Company, handling a general line of photographic supplies, finishing for the amateur, etc. Mr. Hoerter has been identified with the photographic trade for the past twenty-two years, which will count for a great deal in the new venture, and which will, no doubt, prove to be a well-patronized establishment by the photographic trade in that section of the country.

Letter to the Editor

Editor of THE CAMERA.

Dear sir: Herewith a print on Special Royal Velox, made from a negative I procured last week. I used a Darlot Portrait Lens, f.4. No daylight nor flashlight, only a Welsbach inverted gaslight—9.30 P. M., twenty-five seconds exposure. If you think it worthy, publish in an issue of THE CAMERA; or, if you care to comment on it in anyway, I will be glad to hear from you.

W. H. HIRSCH.

We have always contended that the value of a picture can be better secured by a rather prolonged exposure than with a snapshot. The atmosphere about the subject is always manifest, that is, the so-called aerial perspective, when a rather subdued illumination is made use of instead of a concentrated decisive light. The beautiful little gem of a photograph exemplifies our ideas to perfection. The posture is animated, yet reposeful, and there is no suggestion of arrested movement, which is sure to accompany very rapid exposures.

Mr. Hirsch also deserves commendation for the excellent composition. The lines are well chosen and the gradation of light and shade lead the eye imperceptibly from foreground into the background.

An order has been issued from the Post-office Department that all articles made of celluloid must be enclosed in a tightly fitted metal box before admission to the mails.

✽

A paper for all conditions and negatives is supplied by the Dresden Photo Paper Company, 245 East Thirty-ninth street, Chicago. You should write the makers for full descriptive matter.

✽

Curtis & Cameron, Copley square, Boston, Mass., the makers of the famous Copley Prints and Harcourt Platinum Papers, have been compelled to treble the size of their plant, owing to the rapid demand for their products.

✽

Showing amount of hyposulphite of soda (saturated solution or crystals) added to 32 ounces water (60 degrees) to make solution test different strengths by the silver hydrometer.

| Hydrometer Strength | Saturated Sol. of Hypo to 32 ozs. Water | Hypo Crystal to 32 ozs. Water |
|---------------------|---|-------------------------------|
| 10 | 1¼ ounces | 1¾ ounces |
| 12 | 1½ " " | 1¾ " " |
| 15 | 1¾ " " | 2 " " |
| 18 | 2¼ " " | 2¾ " " |
| 20 | 2½ " " | 2¾ " " |
| 25 | 3¼ " " | 3¾ " " |
| 30 | 3½ " " | 3¾ " " |
| 40 | 4¾ " " | 5¼ " " |
| 50 | 6¼ " " | 6¾ " " |

One hundred parts of water will dissolve 102 parts of hypo crystals at 60 degrees Fahrenheit. One fluid ounce of saturated solution at 60 degrees Fahrenheit contains 465.4 grains of hypo crystals.

The above is one of the many useful formulæ found in the new Aristo Manual (third edition), just issued by the American Aristotype Company, Jamestown, N. Y. You should have a copy, and one will be sent free if you ask for the "Red Back Aristo Manual."

The new Beck Isostigmat lens is making quite a hit in England, and the American agents—Williams, Brown & Earle, Philadelphia—report a tremendous sale of the lenses. A descriptive leaflet will be sent by addressing Department W.

✽

G. Gennert, 24 East Thirteenth street, New York, has been appointed United States agent for the Austin Edwards Roll Film, which has had such a success in England. The film is said to be non-curlable and of extreme rapidity. The price is the same as the American roll films.

✽

The Prince of Wales' pet diversions, next to shooting, are smoking and stamp collecting. Another queer hobby is collecting babies' photographs. The more comical the face of the baby the better its portrait pleases him. He even collects pictures of babies published as advertisements by proprietors of infants' foods.

✽

The postcard craze, says the Postmaster General of Great Britain in his annual report, is fast dying out. According to the world's postal statistics, just issued, the Germans are the greatest senders of postcards (chiefly of the picture variety), the number passing through the German post-offices being 1,299,000,000 annually. Great Britain follows with 800,000,000. What it is in the United States is hard to tell, but the number must be phenomenal. In the first half of 1907 Germany sent to the United States nearly 33,000 pounds, over half the quantity she sent to the rest of the world. As there are on an average 175 postcards to the pound, this reaches, in round numbers, 5,775,000 cards sent to the United States alone. The domestic production is fully three hundred times as great, hence the magnitude of the industry; but, like everything else in the "fad line," we suppose the end will come in a few years.

Next month we are going to publish an interesting article and show some of the work of the new Multi-Speed Shutter made by the Multi-Speed Shutter Company, 324 East Sixty-fifth street, New York. The article is written by a user of the shutter and has no interest in the concern. He is an enthusiast. You can become another advocate if you will investigate the merits of the new shutter.

✽

Many are the hard-luck stories told by carbon workers about their failures and the general uneasiness attendant to the beautiful process. The easiest way to get quick and perfect results is by using Ozobrome. This is really carbon work, but so easy to do that you'll wonder that you had so much detail in your negative. All dealers carry it in stock, and it is as cheap as an ordinary P. O. P.—but so much better that it shines like a diamond over a polished pebble.

✽

We have had the pleasure of testing one of the new Eagle adjustable developing tanks during the past month, and it certainly is going to prove itself the long-felt want. The particular point to emphasize is the rack for holding the plate. This works on the sliding principle and adapts itself to various size plates. For instance, if the 5x7 is bought, any size plate can be developed, from the 5x7 down to the lantern slide size. If the worker uses 8x10's, then purchase an extra rack for the lantern slide size only, as the larger tank takes in all other sizes. In all cases, when buying a tank get the nickel-plated ones, as the fixing bath is affected by zinc. George Murphy, Inc., makers, 57 East Ninth street, New York.

✽

With the universal use of Graflex and other cameras equipped with focal plane shutters, there has come the need of a reliable, comprehensive and easily understood book on the subject of high-speed photography. "Focal Plane Shutter Photography," an attractive book issued by the Folmer & Schwing division of the Eastman Kodak Company, furnishes a fund of information that is not only essential to the user of a Focal Plane Shutter, but equally valuable to the everyday photographer who may wish to have clear ideas

about depth of focus, depth of field, angle of view, and many other seemingly abstruse subjects, which are clearly and concisely explained. The illustrations in themselves constitute a comprehensive lesson in photography, as under each picture (and the book contains many) is sufficient information to enable the photographer to proceed with confidence to make negatives of similar subjects. A number of new and heretofore unpublished tables occupy the last five pages of this valuable book, a copy of which, we are informed, will be mailed to those interested in Focal Plane Shutter Photography, free upon request, by the Folmer & Schwing division, Eastman Kodak Company, Rochester, N. Y.

✽

A number of correspondents have written complaints and asked why we have not "said something," or else "get busy," regarding the Lumière autochrome plates and color photography. Some few years ago we boosted the McDonough process of color photography and lost both sleep, time and labor in answering questions and explaining the "whys and wherefores" of the non-delivery of the goods. We shall not refer to the new color plates until we have made a series of tests with them and also until they are on the American market and can be obtained generally. The Lumières have our order for plates, and from a recent letter of advice it will be hard to say when we will announce our own experience. We do not feel justified in recommending goods in THE CAMERA unless we know personally what we are doing.

✽

There is a young artist in Washington, who classes himself as of the impressionistic school, and who, being somewhat out in drawing, generally makes up for his lack of technique by spreading color recklessly and counting on distance for his effect.

At an amateur exhibition he once hung one of his most extraordinary performances.

"Well," said a friend, whom the artist had taken to see the work, "I don't want to flatter you, old chap, but that is far and away the best stuff you have ever done. I congratulate you."

Much pleased, the artist was receiving

the compliment with becoming modesty, when he chanced again to glance at the picture—and turned very red. The committee had hung it upside down!

Hurrying to the head of the committee, he was about to launch into a loud complaint, when he was informed of the good news that an hour before the picture had been sold for \$61. The original price-mark had been \$19.—*Lippincott's*.

No. 20 (October, 1907) of *Camera Work* was received just as our forms were about to go to press. As Mr. Stieglitz gives his personal experience with the new Lumière Autochrome plates (color photography), many of the perplexing questions now bothering the American photographer are solved. *Camera Work* is only sold by subscription at \$6 per annum and forms an art portfolio worth many times the price asked. It is beautifully illustrated. Announcement is made that the Little Galleries of the Photo-Secession, 291 Fifth avenue, New York, will be open to the public this month with a members' show, and an opportunity offered to see the exhibit of new color photography on the Autochrome plate. Speaking of the Autochrome plates, it is announced that they will be on the American market about November 15.

To the Trade:

We beg to announce that the Ansco Company succeeded to our business on Oct. 1.

The large and rapidly increasing demand for the goods of our manufacture, notably Cyko Paper, Ansco Films, Ansco Cameras and professional apparatus, coupled with the fact that the photographic dealer practically depends upon us for a supply of the most necessary photographic staples, has made it imperative that our manufacturing facilities be enlarged. This the Ansco Company expects to do as soon as possible.

The name "Ansco" is an abbreviation of our corporate title, Anthony and Scovill, and the new company will have the advantage of our present management and personnel.

Hoping that the trade will appreciate our efforts in its behalf and that it will bestow on the new company the same courtesies that it has extended to us, we beg to remain,

Yours very truly,

THE ANTHONY & SCOVILL CO.

Developing and Printing for the Amateur is the title of an interesting booklet issued by the Eastman Kodak Company, Rochester, N. Y., for the dealer and those who make it a business of finishing work for the amateur. The booklet is sent free to proprietors. We have been through the Kodak works upon several occasions and marveled at the completeness of everything, more especially at the many labor-saving devices and new ideas employed. The booklet (profusely illustrated) explains the entire operation of developing, printing and finishing. The prefatory remarks in the booklet explain why the Eastman people want the dealers to do their own work.

WHY WE ARE AMATEUR FINISHERS.

"Our developing and printing department was started very nearly twenty years ago. Its first work was in the development of stripping film and the first prints were made on albumen paper. We started this department in order to make a market for the Kodak. Developing the film of those days was not a particularly simple matter—sensitizing and printing albumen paper was not a certain process when the amateur tackled it. The darkroom was necessary even for loading and unloading the Kodak. We wanted to sell Kodaks and film. We had simplified the process of taking the pictures (making the exposure), the finishing was still rather complicated, and the general public knew absolutely nothing about it. Neither photographers nor dealers were doing developing and printing for amateurs. Indeed, there were but few amateurs, anyway—and so we installed our department and advertised '*You Press the Button, We Do the Rest*.'

"Our developing and printing department was born of necessity; it has been continued because it is our most valued and certain method of keeping watch of the quality of our goods—because through this department we discover the mistakes that the amateur is prone to make and are thereby enabled to largely correct such mistakes by alterations in our goods or by explicit instructions in our printed matter.

"Continued simplification and improvement of our products made it a pleasurable possibility for the amateur to 'do the rest' himself, and this we urge upon him, for the

better he understands photography, the better purchaser he becomes. There were and are, however, a large number of amateurs who, from lack of time or proper facilities, still wish some one to 'do the rest,' and so our finishing department has continued, though not growing in proportion with the other departments, because we do not wish to enlarge it, preferring that the bulk of this work should go to others. We have spared no expense, however, in perfecting it. Ideas from all over the world have been tried here, some have been adopted, others dropped. Our developing and printing department might, indeed, be called a testing room for photographic ideas. What we have learned in this department, as to proper and economical methods of manipulation, is yours. If our experimenting will help you turn out better work at a better profit, we shall be satisfied."

✽

Professional Cyko is being talked about a great deal, because it fills up a gap which has hitherto made it impossible for the professional photographer to use developing-out paper in all his work. It is apparent from the inquiries received by the manufacturers that the dealer does not know what Professional Cyko really is and what is expected of it. For instance, they receive requests for sample prints on Professional Cyko, whereas, as a matter of fact, a print on Professional Cyko does not differ from the regular Blue and Yellow Label Cyko, unless the prints consist of comparative tests from the same negative. If a photographer makes his negatives according to what is required to produce good prints on developing-out paper, he need not trouble himself about Professional Cyko, as the regular Yellow Label will yield all there is in the negative. It is only the photographer who makes his negatives to suit platinum paper and exacts as good or better prints from the said negatives on developing-out paper who is interested in Professional Cyko, as no other grade will accomplish that difficult feat. The Professional Cyko emulsion is compounded so as to produce great softness with contrasty negatives without sacrificing brilliancy. Some papers give the impression of softness, but in reality it is flatness, not softness.

An idea which invariably suggests itself to the dealer is, Why should Professional Cyko cost more than the regular Blue and Yellow Labels? The reason may not be obvious, but the manufacturers announce that it is based on facts. The emulsion has more silver. It contains more gelatine. A slight variation in temperature, as well as in a great many other details not always under precise control, unfits the emulsion for Professional Cyko, and if it does not come up to the standard of softness and tonal gradation, it must be discarded at a sacrifice of the money which it cost to produce.

✽

An amateur photographer near Devil's Lake, N. D., lined up a threshing crew and took their pictures. The men were accommodating and stopped the machine for twenty minutes in different positions so as to give him the best possible view. The owner of the threshing outfit appeared on the scene a few minutes later, and is now arranging to bring suit against the photographer for interfering with his workmen. He had about twenty men employed, and, as their wages range from \$3 to \$5 per day, he is much opposed to having them waste time.

It isn't the photographer's fault. Why didn't the threshing machine man "dock" the men for being loafers and pay the photographer for "exposing" them. Still, the world is funny, and I guess there is another bad fellow besides me.

✽

Although not expressed with great felicity, the truth the writer wishes to convey is one that cannot be brought too frequently to the notice of the amateur photographer. The pity of the thing is that, generally speaking, the worker afflicted with the economical mania adopts a "penny wise and pound foolish" method. He will be niggardly about hypo, and even water, which cost comparatively little, heedless of the fact that he is exposing good plates and paper to risks of discoloration. A fresh fixing bath costs little, and how the foolishly economical worker justifies his use of a stale and discolored bath is beyond our comprehension. The darkroom lamp is a still greater danger. The false economist will be parsimonious in his expenditure over this accessory, and then will complain that he cannot obtain good negatives. Be careful, but do not be miserly.—*Focus*.

AMONG the BOOKS

"Art and the Camera." By Anthony Guest. 160 pages. Cloth, \$2 net. The Macmillan Company, 66 Fifth avenue, New York.

Possibly every subject of interest to the photographer has been touched upon by the author in this book. The dainty illustrations appeal strongly to those who aim for the "different methods," and the book generally should be in the hands of all lovers of photography.

✽

"Investigations on the Theory of the Photographic Process." By S. E. Sheppard and C. E. Kenneth Mees. Cloth, \$1.75 net, postpaid. Longmans, Green & Co., 91 Fifth avenue, New York.

Despite the labors of eminent men of science and the exhaustive manner in which most problems are treated, comparatively little inquiry has hitherto been made into the rationale of photographic phenomena.

We are not wholly ignorant of the researches of the English, French and Germans, and also the few in our own country who have sought to enlighten us on the subject, but little has been put into shape accessible to the scientific student of method.

In this age of scientific education this neglect of instruction is hard to account for. We are therefore much gratified to possess the work on "Investigation of Photographic Process" by Drs. Sheppard and Mees, of London. We are hardly qualified to adequately appreciate the theories advanced by the authors, but within the limits of our capacity we find much, very much, which has widened the horizon of our comprehension of the physics and chemistry of photography, and we are confident that a careful and thorough study of this book will benefit others interested in the difficult problems. We say thorough and careful study, for the book demands and is entitled to it, for it is not intended for the casual reader, nor for those dilettante who like to imbibe a draught or two of science to irrigate their barren information. The book is only for the earnest student and the conscientious worker who is seeking for more light on a subject somewhat obscure and at times even seemingly occult.

La Photocollographie pour Tous, par L. Tranchant. Une brochure de la Bibliothèque de la *Photo-Revue*. Prix: 60 centimes.— Paris, Charles Mendel, éditeur.

It might seem to be an enterprise of considerable temerity to attempt to write in a little pamphlet of forty-eight pages a complete treatise on photo-collography; nevertheless, M. Tranchant, aided by an extensive experience and a carefully maintained and cultivated habit of method, has succeeded in accomplishing this.

Everything of interest to the photographer who desires to obtain permanent pictures by photo-mechanical means: The making of reversed negatives, of positive direct, the preparation and spreading of the bichromated films on glass or metal plates, exposure, development, printing, detailed instructions for inking up, that stumbling-block of process work, a study of the failures which may occur, and even good advice as to the economical recovery of waste and the care of apparatus can be found in this booklet.

✽

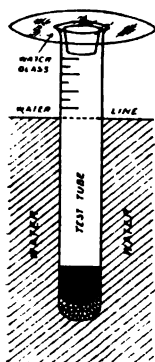
Comment on obtient une photographie en Couleurs: Procédés trichrome, Methodes par reseaux polychromes, Procédés par dispersion spectrale, par H. Quentin. Prix 75 centimes. Charles Mendel, éditeur, 118, Rue d'Assas, Paris.

The reproduction in the natural colors of the human face, landscapes, still life, groups and moving objects by photographic means is at present an operation within the abilities of all amateur photographers, as the reading of this pamphlet demonstrates. All that is required in the practice of chromo-photography, even in those processes reputed to be of the greatest difficulty, is care, attention and exactness in the smallest details.

The author intentionally avoids all theoretical consideration that might seem too difficult for the majority of amateurs, and confines himself strictly to practical grounds. After describing the series of operations necessary to the making of three-color prints by the various methods of imbibition and superposition, he gives a complete description of those recent perfections that permit of obtaining colored pictures directly, without other manipulations than those habitual to the exposition in the camera, development and fixing of ordinary plates.

An Inexpensive Balance

I think the inexpensive balance described in a recent "A. P." might be somewhat improved upon. Take a six-inch test tube and sink it sufficiently deep in water by means of melted wax, in which hot shot are



dropped. On bottom of watch-glass cement a slice of cork of a size to very loosely fit the tube and thus prevent the watch-glass and contents precipitating themselves in the water. A piece of paper might be cemented inside of tube, with marks in ink on it to represent various weights. Of course the paper must be inserted in the tube prior to putting the weights in the watch-

glass in the first instance. The balance would be more sensitive if a narrower tube were used, or perhaps one with a bulb might be better. The shot and wax may be put in cold and then warmed after adjustment to make a neat job. Sealing-wax might be preferable to paraffin-wax. The watch-glass now becomes the pan into which whatever is to be weighted is placed, and the heavier it is the deeper the test tube will sink in the water, in which, owing to the shot, it floats in a vertical position.—S. J. B. F. in *The Amateur Photographer*.



Faulty Finders

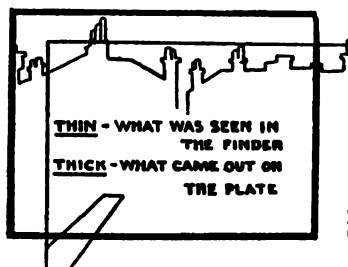
Finders are notoriously incorrect. The following is an example of a faulty finder and of the means taken to render it serviceable. The finder was one of the fixed type, built into the body of the camera (quarter-plate), and the result of photographing a long line of children was that the first child on the left in the finished print was cut in twain, only one-half showing, whilst her feet and the feet of some of the others were altogether missing.

A careful trial was made, the subject chosen being some chimney-pots, which could be counted, and those shown on the finder but not on the plate, noted. So the camera was set up and first of all a careful sketch of what appeared in the finder was

made (upon an enlarged scale) upon a piece of paper quarter-plate size, and then the exposure was made.

On development, the plate, when placed (film-side up) over the sketch, appeared as in the accompanying diagram. The plate is shown within a heavy line, and the sketch within a thin line. (It should be remembered that although the finder takes the topsy-turvydom out of objects, it still reverses them as regards right and left.)

The experiment showed that the finder was faulty, not only in a lateral direction—



the direction of the line of the children—but also in the perpendicular direction, in its indication of the amount of foreground—the feet of the children.

Apparently the only thing to be done, short of refitting the finder, was to black out the lower and right-hand margins to the extent indicated in the sketch. This was the course adopted, but when using this particular camera we have to remember that besides what is seen in the finder, we shall get in addition a small strip along the top and left-hand side. But this we do not mind, inasmuch as the great fault of the camera in not securing something which we intended to secure, will be obviated in the future.—*Focus*.



Loss of Density in the Fixing Bath

The question has been raised in a contemporary. Why do negatives sometimes lose density in the fixing bath? It is, of course, fairly well known that in the presence of air and sunlight the fixing bath very vigorously attacks the silver image, but the query applies to the ordinary conditions of fixation. In the particular case in question the querist found that in cold weather his negatives lost density, and that an increase of pyro tended to obviate the loss. This

points to under-development, and we believe it is a certain fact that imperfectly developed negatives do lose density, though a fully developed image will stand very prolonged fixation without any damage. It is generally assumed that the resulting thin image is simply the natural result of under-development, and that it is quite unnecessary to assume any solvent action on the part of the fixing bath; but while it may be easy to mistake an initial lack of deposit for an ultimate loss of deposit, we do not think that this mistake has occurred, for we have noted many instances in which slightly under-developed negatives have come from the fixing bath in a very much thinner condition than it was at all reasonable to expect. As a matter of fact, if we assume the truth of the subsalt theory, a very feasible explanation is available, for if subsalts are formed in the latent image in the conditions generally postulated, we may most reasonably assume that they are formed in the process of development, and, if development is incomplete, the subsalts must exist in the image when the plate is put into the fixing bath. In this case it is also reasonable to assume that the hypo will decompose the subsalt into silver and silver bromide, dissolving the latter. The net result, then, is that we have one atom of silver where complete development would have left two. —*The British Journal of Photography.*

The English Camera Fiend

The camera fiend has reached degrees of development in England never even to be dreamed of in America, if recent dispatches are to be relied upon. It is only a few days since one of them who insisted upon snap-shotting the bridal party at a church wedding, after being forbidden that privilege, managed to sneak up the stairs leading to the pulpit and was in the act of flash-lighting the astounded bridal party and guests when forcibly ejected, after a struggle with a church official so boisterous as to throw the bride into a faint and produce general demoralization. Again, at the English motor track at Brooklands, an accident involved several people in broken limbs and other injuries which left them unconscious and in need of medical and surgical attendance. No sooner did the doctors and surgeons get

to work, however, than the camera fiends descended and insisted upon photographing the scene with the doctors performing operations. When the doorkeeper was forced to follow up his warnings with forcible ejections of these obstreperous fellows, he was set upon by such a combination of camera fiends that it was only when the track officials came to the rescue and beat the intruders over the heads with their own cameras that a decent regard for the injured and their attendants was enforced. If this had happened in this country we should have heard our English cousins exclaiming "How American!" As it is, we await with curiosity the English press comment.

A Simple Method of Marking Stereo Prints Before Transposing

Dealers and others who undertake printing and mounting know the difficulty often experienced in placing the halves of stereo prints in their correct position. The following method is simple and good:

Take the print prior to cutting for transposition and lay it face downwards. In the centre draw a horizontal line, about $2\frac{1}{2}$ inches long, as in Fig. 1. Proceed to trim

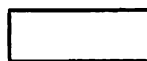


Fig. 1



Fig. 2

the print for mounting in the ordinary manner, and when transposed, each print will have a portion of the line on its outer edge, as in Fig. 2. This saves time, is much simpler and less confusing than writing R. L. on the back of each print.—*The Photographic Dealer.*

When one is photographing a sitter with a very short neck, the most agreeable result will generally be secured by lowering the camera to a point below the face of the sitter. This raises the head above the shoulders, but the artifice should not be adopted if it tends to give undue prominence to the mouth or nostrils. In lighting the sitter every effort should be made to get contrast between the two sides of the face. Both sides should show half-tone in the print, but the tones on the shadow side of the face should, of course, be darker than those on the opposite side.—*Focus.*

DECEMBER, 1907

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THE CAMERA

A PRACTICAL MAGAZINE FOR PHOTOGRAPHERS

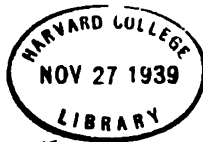
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Autochrome Color Photography



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Re-developed Cyko

Send for Cyko Manual

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A Few Sample Offers:

No. 1.—The Camera, Delineator, McClure's and World's Work
Value, \$6.50 . . . **Our Price, \$3.75**

No. 2.—The Camera and the Bulletin of Photography
Value, \$2.75 . . . **Our Price, \$2.40**

No. 3.—The Camera, Bulletin of Photography and Metropolitan Magazine
Value, \$4.25 . . . **Our Price, \$3.10**

No. 4.—The Camera and Metropolitan Magazine
Value, \$2.50 . . . **Our Price, \$1.65**

The following may be substituted for the Metropolitan: Success Magazine, or Women's Home Companion, or Travel Magazine, or Garden Magazine, or American Magazine, or Cosmopolitan.

No. 5.—The Camera, Bulletin of Photography and Photo-Era
Value, \$4.25 . . . **Our Price, \$3.40**

No. 6.—The Camera and Photo-Era, Value, \$2.50 . . . **Our Price, \$2.00**

No. 7.—The Camera, Photo-Era and Photographic Times
Value, \$3.50 . . . **Our Price, \$2.60**

No. 8.—The Camera and Photographic Times
Value, \$2.00 . . . **Our Price, \$1.55**

No. 9.—The Camera and Camera Craft,
Value, \$2.00 . . . **Our Price, \$1.65**

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Value, \$4.00 . . . **Our Price, \$3.00**

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offer No. 4 Value, \$6.00 . . . **Our Price, \$3.75**

We can give you any combination of magazines you want, and upon sending in list such as you desire, we will quote the lowest prices.

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The above prices are for the magazines sent to any part of the United States and possessions, Cuba and Mexico, and may be sent to old and new subscribers or to separate names. Cash with order. Do not send stamps—remit by Express or Money Order, or New York or Philadelphia Draft. Foreign and Canadian postage extra.

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- ❑ It will allow fastest work, under unfavorable conditions of light, with f 6.8 lenses.
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 - ❑ Only one spring. Slow instantaneous, bulb and time exposures absolutely noiseless.
 - ❑ Separate Diaphragm. No stops need to be used except for copying purposes.

THE SHUTTER IS FULLY GUARANTEED

In writing advertisers, kindly mention "The Camera."

Competition No. 115

\$50.00

IN CASH PRIZES

"The Old Oaken Bucket" competition was so successful, that we announce another one based on Malcolm Forbes poem as the subject for our next in the series. The subject, "MOTHER" is so broad that we hope our contestants will find much pleasure in giving their conception of the poem

"MOTHER"

MALCOLM FORBES

I

A baby face grown sadly wise—
And she kissed the dimpled chin,
And smiled with weary mother eyes,
When she stopped in his baby din
To whisper low—"O, maminie, 'oo cries,
But wait till my ship comes in."

II

A boyish face—but she smiled once more,
And a hand, ah! worn and thin
Waved dumb good-bye at the cottage door,
When he went his gold to win;
"And, mother," he cried, "you'll be waiting here—
Just here, when my ship comes in."

III

'Twas manhood's face, that the world had scarred
Full deep with sorrow and sin,
But low he knelt in the old churchyard
By a grave 'mong the tangled whin.
And "Mother," he cried, "it's hard, it's hard—
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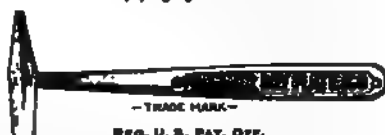
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The Autochrome Plate—Some First Experiences

By C. H. Claudy

THE fashion seems to be set in beginning to talk of Autochrome plates—tell what they did to your appetite and how they affected your sleep. So I am in style when I say that my many years of photographic experience were no proof at all against the aura of excitement with which these wonderful products of man's ingenuity and skill are surrounded. From the time I received them until I had developed the last one of my precious lot, I ate little and dreamed much—every night for five nights, all night, my visions were of color.

And it is enough to excite any one—this obtaining a true photograph in the colors of nature, with one exposure on one plate in an ordinary camera. It has been the dream of every one who knows the business end of a camera, from the time of Daguerre down to now; it has chased many a man from the photographic field to the laboratory, and many and strange and weird have been the color processes conceived and brought forth to a waiting world. But it has remained for Lumière—and the absence of a title is the greatest honor which the photographic world can give him—to perfect, manufacture, and place upon the open market a plate which any one can use, and with which any one, with a small amount of photographic knowledge and skill and a scrupulous attention to details and the instructions, can produce true color photographs.

There are details yet to be perfected, of course. The plates are not mechanically perfect as yet, and they are very slow, and they have little, if any, latitude; but these are mere nothings compared to the one wonderful, undeniable, yet hardly to be believed fact, that here before us, at last, is color photography. I cannot realize it, after having worked the process and seen the wonderful results—you, who have yet to expose your first Autochrome, can

hardly realize it as well—if at all—as I can who have had that experience. I can imagine myself forgetting, in the haze of old age, my first plate, as it developed before a ruby light and I saw that wonderful phenomenon, so common with us as now never to excite remark—the development of a plate. But I cannot imagine ever forgetting the first Autochromes I made, and it will take a very remarkable discovery, indeed, to get me any more worked up and excited than I have been—and still am—over this thing.

Failures? Of course, I had failures! I expected them. I knew no more than those of you who never saw the outside of an Autochrome box what kind of an exposure to give. I had read everything about the process that came my way, but except for learning that the exposures were abnormally long, compared to the usual plate, I had no idea of the proper time to give. Nor, I am sorry to say, am I yet able, with the small experience I have had, to state a definite factor by which some known exposure can be multiplied to give the Autochrome exposure.

The manufacturers help you very little. They say that in midsummer, at *f.8*, in the middle of the day, in bright sunshine, the exposure will average one second, but they do not say upon what, or whether they mean an open landscape or a nearby view. They tell you that with a lens working about *f.4* in a portrait gallery the exposure will run from ten to thirty seconds, but that does not give much, nor, in view of my own experience, very accurate information. It seems to me that the crying need just now in connection with these plates is a statement, either from the manufacturers, or some one with the money and time to devote to finding out, of a set of factors of exposure. Thus, if the exposure with a Seed's 27 in bright sunlight in midwinter, on a building, at noon, is one-tenth second at *f.8*, the exposure for an Autochrome under the same conditions and with the same stop will be ten seconds. Let no one take this example as instructive of real exposures; it is simply an illustration of what is needed as a factor statement. Let some one be able to authoritatively state that the exposures for a Seed's 27, or a Hammer's Blue Label, or any other well-known plate, must be multiplied by a hundred, or fifty, or two hundred, or whatever it may be, and the Autochromists of the future will waste less plates, have less heartaches and experience less exasperation.

The exposure is the problem. Development, reduction, hardening, second development, destroying developer, intensification, clearing, fixing—are not at all difficult. Ordinary care in handling the plates, scrupulous cleanliness in making up and using solutions, a strict following of instructions, are all that is required to produce excellent and beautiful results. But all the care in the world won't produce anything worth looking at if the exposure has not been what it should have been. The plates do not seem to have much latitude; if three seconds is a correct time, one or five seconds will not give anything even approaching a good result, as is the case with the usual plates. An underexposed plate is thick, black, hardly to be seen through, with a suggestion of color in the highlights. An overexposed plate is thin, with washed-out, pale-looking colors. Neither has any beauty. Of the two evils, a very

slight underexposure or a very *slight* overexposure, the former seems to be preferred, as the colors are brilliant, and as, supposing the underexposure has not been of such amount as to unduly thicken the plate, the slight added density does not destroy the beauty of the result.

But there are some photographic ideas getting turned topsy-turvy with these plates. In the first place, the plate goes in the holder glass side out. In the second, development, loading, and unloading should be done in absolute darkness. Red light shining on the plate from the glass side produces red fog; shining on it from the film side, ordinary fog. You can't have a plate sensitive to red to the extent that it can not only correctly but beautifully render a red brick building or a red rose, and not have it sensitive to a red light. The more exposure a plate has, the thinner it is—the less exposure the thicker it is. The thickest and least transparent plate would be produced by giving it no exposure at all; and the thinnest plate, one overexposed a thousand or so times. In the first case, the first developer wouldn't develop anything, having no light-affected emulsion to work upon. Consequently, the permanganate reducer would have nothing to reduce. The second developer would have all the silver in the plate to reduce, and the plate would be thick. In the second instance, the first developer would reduce *all* the silver, the per-

manganate would dissolve it *all* away and the second developer would have *nothing* to act upon, and the plate would remain translucent. These particulars are given because some people complain that they cannot tell at first whether their failures are suffering from under- or overexposure, nor is the booklet of instructions particularly lucid on the point.

The process is short. It does not take twenty minutes from the time the developer is first poured on the plate to the time it is getting its final washing, and less than seven minutes from the time of first immersion until the colors are seen, after the second development, in almost their full beauty.

Eight baths, with a washing between each, seems to sound very much as a nightmare looks, but, as a matter of fact, they are simplicity itself, and the manipulation of the plate is very easy. Have the baths all made up beforehand, in wide-mouthed labeled bottles,—either learn the instructions by heart or get some one to read them to you as you go ahead—have a watch handy with which to calculate time, and don't get excited, and that is about all there is to it.

I found the frilling trouble much exaggerated, although the cool weather and cool water of this time of year has much to do with that, I know. In summer I should suppose the plate would frill badly unless protected with

iced solutions. But what little tendency to frill there is is promptly stopped with the chrome-alum bath, and its use seems to me to be a necessity.

The possibilities of the plate? Endless,—simply endless. Abler pens than mine have descanted upon the art side of the question and much abler photographers than I will ever be must be looked to to realize some of the wonderful art possibilities of this vehicle for individual expression. Instead of judging a picture by line and tone it will now be line and color, and could Autochromes be reproduced in the pages of magazines as easily as the half tone reproduces the photograph we would all go color mad, and the critics would really commence to believe life worth living. Unfortunately no such reproduction is possible without a good deal of expense, and the single result of any one exposure will make color photograph masterpieces longer in getting known and with a much smaller audience than has the chance to view the ordinary duplicatable photograph. But it is a new tool, a new medium, and some of our artists with brush and color will have to look sharp that our other artists—those with lens and plate—do not overtop them.

Its commercial application seems limitless, and the service it is to render science is without valuation. Think of photomicrographs in really natural colors! What the microscope with the camera has done is a marvel, and compared to the hand drawings, with or without the camera lucida, the photomicrographs of to-day are perfection themselves. But think of a photomicrograph as far ahead in its coloring of a hand colored one as the photomicrograph is of the hand drawing! And this is only one—and a little one at that—only *one* application of a thousand. Already, so I understand, they are using it to record pathological specimens in normal colors—and think of the aid to medicine! Botany, agriculture, possibly astronomy, by applying it to spectroscopy photography,—is there a science that cannot use it?

It is only a step, it is true. Some day we will have them on paper and by reflected light, and as easily as we now make a Velox print. But it is a very big and a long step. And it seems to me, with what knowledge I have of photography and its history, that this invention puts its inventor beside those names we all honor—and in the future, when we bracket the great steps forward which photography has made, we must put Lumière's name and Lumière's Autochrome plate besides the dry plate, Eastman's film, the anastigmat lens and the originator of the whole science.—Daguerre and the men immediately his successors.

It has been already noted that one of the essentials to Autochrome success lies in care and attention to details and in paying close attention to instructions. For instance, when the instructions say to use distilled water, it doesn't mean that distilled water is better but that tap water will do—it means just that—distilled water. I successfully substituted a spring water generally sold and noted for its purity, when I couldn't get distilled water, but it isn't right to do so; it isn't right by the plate to expect it to produce results when the proper materials are not used. Ordinary water, plenty pure enough for many photographic processes, is not fit for making up a solution containing, for instance,

silver nitrate, and you have only to dissolve a bit in distilled water and another bit in tap water to see why.

It is important that the temperature of the developing solution be not more than 65° F. and not much less. The first development is for a period of time, —not until it "looks right." If the temperature is too low, in two and one-half minutes the full action will not have taken place, and if too high, frilling will take place and too much development. It will be an interesting thing to know how much control for contrast can be exercised by raising or lowering temperature of the developer and increasing or decreasing the time. But let us get straight-ahead results first and experiment afterwards.

The method of development I employed was this: In the darkroom solution A was mixed with water—double quantities, as I am not used to developing a 5x7 plate with three ounces of solution or less. Solution B, to be poured into the developer at the last possible minute, was measured and set close to the tray, and C was handy in a graduate in the sink. These three are all that are needed in the darkroom. A friend with a watch stood outside the door. The red light was turned out and in absolute darkness the slide drawn, plate removed, and carefully turned over to bring film side uppermost, and then the measured solution B was poured into developer. The plate was slid in, tray rocked for a moment, and the friend notified that development had started. Then I waited for seemingly an age, until the call "Time's up" from without started things going again. Curious how long two and a half minutes can be when you are crazy to see your first color photo. The developer was tipped out of the tray into the sink, the plate and tray rinsed together and C, in the graduate in the sink, found and poured on. The light was turned on and the door opened and I went out with my first color plate.

If at this stage the plate looks like an ordinary developed and unfixed plate, the exposure is apt to prove correct. If there is much creamy white showing, it is likely to be underexposed, and if there is no creamy white showing it is probably overexposed. I say creamy white, because that is the usual expression to use when speaking of an unfixed plate, but as C is a high colored dark red permanganate solution, pinkish white might be near the mark.

The plate should be left in at least four minutes, and a bit longer won't do as much harm as taking it out too soon. It is somewhat difficult to tell just when the action is complete, either by looking through the plate or at it, but four minutes in a fresh solution will do the work. The action of C is to reduce and dissolve away the silver reduced in development. If this action is not sufficiently complete, black streaks and splotches show in the completed plate. The most recent foreign experiences show that this bath should be made up fresh for use—the sulphuric acid not added until it is to be used. Permanganate of potassium is a very sensitive chemical and must be handled carefully. The presence of the acid in the solution for any considerable time prior to use seems to degrade its reducing power. Again, it is absolutely essential that the tray used for this work should be mechanically *and chemically* clean. The slightest trace of organic matter will produce a scum, and if a rubber tray



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*Courtesy of
The Craftsman*

is used, and it be at all impregnated with other chemicals, the solution may turn turbid and a dark opaque red, which is anything but beneficial to the plate.

Sulphite of soda and permanganate of potassium are enemies, and it may be that an additional bath of sodium sulphite, after the permanganate of potash bath and before redevelopment, may be found beneficial. I only tried this on one plate, and could see no ill effect; but one plate is not sufficient experience to base a conclusion upon; I merely suggest it for some experimenter to try. Manganic oxide of some description may stain the plate, if the solution does not remain pure and the tray be not clean, and the sulphite would certainly have a tendency to remove this.

The second development, with amidol substituted for the dianol of the directions,—because dianol is not easily procured here—must be thorough and complete. It is not enough to wait for a few seconds until the plate has seemingly turned black; leave it in until you are certain the development is complete. It is essential that the plate be thoroughly exposed to white light either during the second development or prior to it, but this does not mean sunlight. Take the light from the sky or an electric light. On the completeness of the second development depends in a large measure the brilliancy of the colors, and as the development can only go as far as the light affected silver will allow it, overdevelopment is not to be feared. On raising the plate from the second development the colors appear in nearly their complete brilliancy, and you will at once know whether or not you have been successful. If the plate is thick and difficult to see through, the original exposure was insufficient. If the plate is thin, with weak colors, it has had too much exposure.

The next step, clearing out all the developer by a weak mixture of solution C in water, is a matter of seconds, and then intensification with the solutions F and G in proper proportion is to be done. One intensification is usually sufficient. If the plate is but slightly overexposed, two or more intensifications, with the clearing bath E between each, may be resorted to and will increase contrast to some extent. A badly overexposed plate, however, cannot be much helped with the intensifier. A final clearing, in a weak permanganate solution without acid, precedes rinsing and fixing. The fixing bath may be made up with 7 grams metabisulphite of potassium, instead of the "commercial solution" of bisulphite of soda stated in the directions. The action of the fixing bath and the soda or potash seems to me more that of a general cleaning up than a fixing, any way, as, if the exposure and development with D have been correctly done, there cannot be much, if any, unaffected silver left to be "fixed."

It seemed good technic to me to leave the plate in one tray as much as possible, rinsing it thoroughly under the tap without lifting the plate, as handling it only increases the tendency to frill. But it should be noted that something should be laid beneath the plate, if this is done, in order that the rinsing water get thoroughly onto the bottom of the plate. The silver intensification I did

in a tray which had just been cleaned; the chrome alum bath was in a tray by itself and the final fixing the same.

The use of the screen furnished by the makers for the plate is essential. They say no other will do, and that is easily believed when you consider that the dyes of the starch grains, which give the colors of the plate, the screen and the light are all adjusted to work one with another. Any other screen than one of exactly the quality and color supplied will give false values. Knowing that the use of the screen was essential, I yet had curiosity enough to see what the result would be in making a plate without a screen. The result is a beautiful violet positive, violet being the only color showing. This, I suppose, is from the preponderant activity of the violet rays, which are cut down and checked with the yellow screen.

I have yet to see that the accounts of one man's experiments as to timing helped another very much. However, they all seem to be of interest, so here are a few.

The normal exposure, through a microscope, of a certain rock section, by polarized light, was one second. An exposure of twenty seconds with the polarized light on an Autochrome showed great underexposure. Successive exposures indicated the best time as from one and one-half to two minutes, the best plate made in this series of experiments sustaining two and one-half minutes' exposure. Rating the normal exposure as one second, a factor was arrived at of from 90 to 120, which was the multiplier to be applied to a normal exposure to get an Autochrome exposure. Applying this on an out-the-window view with the sun shining, at 3.30 in the afternoon, it was calculated that an exposure of ten seconds at $f.8$ would do the trick. It did it, but a second of twenty seconds was much better. So here, allowing the correct exposure to be one-tenth second for a normal plate, was a factor of 200.

In making a picture of the National Museum in Washington, D. C., a bright red brick building with a blue and yellow brick inlay, I followed the rule I deduced from the instructions in the book, viz., if one second in summer, at midday, is correct at $f.8$ for an Autochrome, the Autochrome is fifty times slower on outdoor work in the sun than Eastman film. As a general rule, an exposure of one-fiftieth second outdoors in summer at $f.8$ will give a good negative. Allowing one-fifth second as normal in the case of the museum, with hazy sun in November, at $f.8$, I timed the Autochrome as being a ten-second exposure, and then I allowed half as much again, making fifteen seconds, making the allowance for the slight haze. The instructions tell you the exposure is six times as long for a cloudy view as for one on which the sun is shining. This plate is very slightly underexposed, just a trifle thick, and the sky not quite bright enough, but the colors are wonderful—faithful and true and bright, and the stereoscopic effect—a matter of the imagination alone, of course, but very evident for all that—is remarkable. The illusion produced by the faithful colors is such that the mind supplies the rest, and things seem to stand out much more than they do in the usual photograph.

But applying this same rule to a flower study on an overcast day, and making

due allowances for difference in amount of light reflected from smaller object, glass of greenhouse, etc., etc., and deciding on an exposure of six minutes at $f.8$, I fell down with overexposure.

An exposure of four minutes on a collection of colored bottles, brass boxes, booklet covers in colors, a watch, some coins, etc., by the light of two electric arcs, at $f.16$, produced a very interesting plate, very close to properly exposed, with a slight error on the under side. Immediately afterwards, and with the camera in the same position, I sat for my portrait, with a red necktie of tissue paper supplied for the sake of some color and an American flag for a background. The lens was opened to $f.8$ and an exposure of one and one-half minutes given, or 50 per cent. more than in the previous successful experiment, yet the plate was badly underexposed. Incidentally, I may say I do not recom-

mend any one to try this without dark glasses. I was blind for half an hour afterwards, and my eyes ache as I write of it. Will the head boy in the class of Autochrome plate work kindly read me the riddle? The necktie took all right, so did my white shirt, but my face was too highly colored in the picture, and my blue serge coat was rendered black, as was the blue of the Stars and Stripes.

At $f.4$ from ten to thirty seconds in a studio was recommended by the instructions; the square of 4 is 16. The square of 6.8 is 46 and a fraction; 46 is nearly three times 16. Taking the greatest time stated in the book, thirty seconds, and the least time, ten seconds, one arrives at a mean of twenty seconds. Multiplying this by three gives sixty seconds. For one minute, or sixty seconds, and ten seconds more for good measure, I had a sitter in a modern portrait gallery, with all curtains thrown back, and got a badly under-timed plate. Outdoors, on the same day, with the same opening, I got a first-class plate in less than half the time, yet the light was, if anything, more brilliant to the eye and to the ordinary plate in the gallery than out of it, on account of glass-glare and reflectors. Not only was the subject in the gallery picture underexposed, but the white background was underexposed.

My experience with Autochromes now includes indoor and outdoor portraits, indoor still life by both electric and natural light, a portrait with artificial light, several photomicrographs, flowers, buildings and landscapes. My failures (meaning the plates I worked alone) are one less than my successes. My failures were *all* due to errors on my part in calculating exposures, and were in no way the fault of the plate, and this is true of all the plates I have seen done, either by myself or others. With my next batch I hope to do much better, and with the experience I have had I believe that I can.

But I do believe that the thing needed now is either a graphic representation of the curve of exposure of these plates, to be supplied by the manufacturers, with the curve of some well-known plate to be used as a comparison, or a set of factors for different times and different circumstances by which the normal exposure of some known plate can be multiplied, and so the Autochrome exposure arrived at.

With what little experience I have had it seems to me as if the curve of sensitiveness of this plate must be radically different than the ordinary plate and much less responsive to weak lights, in proportion to its responsiveness to strong lights, than the usual dry plate. This may be all wrong, but it looks that way to me in the light of the little work I have had a chance to do.

But that is not the way I want to close this paper of first experiences. I want to reiterate that this plate is one of the greatest things that have happened to photography for many a long day—that when failures are had they are the fault of the workman and not of the plate, and the process is absurdly simple when one thinks of the results. Finally, I want to say that what I have written is necessarily tentative, and only written because the editor wants his readers to know how the plates appear to those who use them for the first time.



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IRIS

MARY LYON TAYLOR

*Courtesy of
The Craftsman*



THE PHILOSOPHER

MARY LYON TAYLOR

*Courtesy of
The Craftsman*

Photographic Studies of Home Life

Illustrations loaned and reprinted through the courtesy of
The Craftsman



THE expression, by means of the camera, of an idea or emotion otherwise difficult to embody in form, has come to be the distinguishing characteristic of what is known as the Secessionist School of Photography. From time to time we have given in *The Craftsman* notable examples of the work of artists who employ the camera in place of the brush, modeling tool, or etching needle to express the beauty they see in Nature or in certain phases of character and of feeling, but so far we have taken up very little of what might be called, by comparison, the work of beginners. For this reason the group of photographs reproduced here seemed to us to be of special interest, because they are the work of a woman who took up photography only as a pastime, and not more than a year ago, and who already has gained a charm and individuality in her work that entitles it to a place among the best efforts of many Secessionists of far greater experience and extent of achievement.

Mrs. Mary Lyon Taylor lives in Indianapolis. When she was a girl she received excellent training along artistic lines both here and abroad, giving special attention to miniature painting on porcelain and ivory and finding her keenest interest in portraiture, especially when the subjects were women. Mrs. Taylor's work became little more than a pastime after her marriage, when the care of her home and children formed her chief interest, but a year ago, during a period of sorrow and ill health, she turned again to it as a diversion, this time choosing the camera as her medium, for the reason that its possibilities as a means of ready and flexible artistic expression greatly interested her. For some time the obstacles and failures she encountered were very discouraging, but the interest of the work and the hope of being able some time to express what she had in mind gave her courage to go on experimenting, with the result that through sheer love of the work she has succeeded in producing pictures that are a most delicate and poetic expression of the simpler and happier phases of life.

Working at home, in a studio established near a large window in her own drawing-room, and using as her subjects her own home people and friends, Mrs. Taylor has saturated her pictures with the quiet peacefulness of happy domestic life. The study entitled "The Philosopher" is the portrait of her own father, a clergyman, 87 years old, and a writer and student whose mentality is still active and clear. The physical resemblance to Abraham Lincoln is marked, and in his daughter's eyes the resemblance in character is equally strong. The loving recognition of this is the most striking element in the picture, with its suggestion of rugged strength, great gentleness, and untiring industry that does not flag even at an age when most men are ready to lay down their work and rest. The same spirit of quiet home happiness is shown in the picture of the woman seated with her work by an old-fashioned sewing table. There is all the delicate refinement of the old-fashioned gentlewoman

whose world lay within the four walls of her home, and who never vexed herself with the problems of the turbulent world outside.

The sympathetic understanding between mother and child is suggested delightfully in the picture called "Goldfish," where the grave-faced little one watching the fish is so sure that the interest of the smiling mother standing behind her is as great as her own. This picture is a portrait of Mrs. Alexander Paton, of London, a sister-in-law of Hugh Paton, an etcher of note, and president of the Art Association of Manchester, England. Yet, after all, it is not so much a portrait as an embodiment of happy motherhood, a woman absolutely content in her home, and surrounding her children with that atmosphere of restful happiness which goes so far toward giving them the right foundation for a sane and useful life.

Another picture of children is called "Soap Bubbles," and is no less expressive of the absorbing interest felt by the little ones in blowing and tossing into the air the filmy, rainbow-tinted globes than it is charming in its lights and shadows and well balanced in composition. The picture is of the young son and daughter of Mr. Meredith Nicholson, the writer, and it probably suggests the children themselves far more vividly than the clearest and best defined photograph that is nothing more than a portrait.

The two studies, "Madonna" and "Iris," show different phases of the character of one sweet-faced woman who is a friend of the artist. The quaint beauty accentuated by the old-fashioned costume in "Iris," has in it a suggestion of spirituality which is brought out to the fullest degree in the "Madonna," with its dreamy innocence and wistfulness of expression and the youthfulness of contour and pose.



Home Portraiture—Full Figures by a Window

By Felix Raymer

SOME time ago I conducted a series of articles upon home portraiture in *THE CAMERA*, and have since that time had many questions asked me, and in many cases the questions took up matters not touched upon in the series. One which I consider of great benefit to the amateur, as well as one that will prove of special interest to all lovers of portrait work at home, is the making of full figures by a window and at the same time getting all the portrait qualities that can be had in the making of bust work. In the articles published some time ago on this subject we used several full-figure pictures, and told how to make them; but, of course, there were many things that could not be taken up at that time that may be possible now. One is the matter of concentration and detail. Often I have had an amateur say to me he could not concentrate the light on the face of his subject without losing all the detail in the lower parts of the drapery, and especially when the subject was dressed in dark goods. Many old operators say the same thing, and will contend that it is due to the window being so small that the light will not cover the figure well enough to bring out all parts. To offset this trouble the operator



MADONNA

MARY LYON TAYLOR

*Courtesy of
The Craftsman*

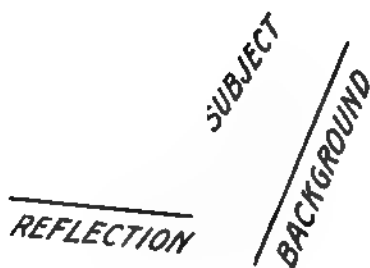


MARY LYON TAYLOR

*Courtesy of
The Craftsman*

will open his window as wide as possible so as to admit all the light it will and then fail in one part of his work, and that is in concentration. On the other hand, he says if he closes off the window to get concentration he fails to get detail in the lower shadows, and particularly in the dress near the floor. This is true if he does not know how to handle his light. I have before this given a method for curtaining the light, but I am going to do so again, for I am sure there are many late subscribers who have not read these directions.

First, I will say I have never seen a window that really needed the upper half curtained off, for as a rule if there is any trouble experienced by the operator in making a good negative it is from a lack of top light and not from having too much. So it is my rule to leave the top sash free from curtains. On all windows there is usually a shade, sometimes of green goods or perhaps of red. But the color makes but little difference so long as it is of an opaque nature. This screen should be taken from the top of the window and fastened at the bottom (see diagram), so that the curtain can be drawn upward instead of downward. This permits of the operator curtaining off the lower part of his light and leaving the upper part open. The reason for this is that in nature all light falls on the subject from above, and if we undertake to light our subjects with a light coming from below them the result is usually very unpleasant.



Of course, if it is a fire-light scene or a candle-light picture where the source of light is shown in the picture the effect is just what is seen under such circumstances, and, of course, natural; but in portrait work the source of light not being seen, we associate the lighting with nature, and in this case nature lights her subjects from above, and we, of course, expect to see a natural result, or a result in keeping with our ideas of nature based upon our education in this respect.

There should be a pulley at the top of the window so the cord can be drawn through easily and fastened at any point, placing the curtain just where it is needed.

The higher the window is the farther from it the subject should be posed. This is so the light can be made to fall on the face from the direction best suited to a combination of character and roundness. Readers who have followed me through this department will know I place considerable stress upon having the light fall on the face from the right direction, and that I claim the right direction to be an angle of about 45 degrees. So bear in mind the height of your window makes a big difference in the posing of the subject.

If full lengths are to be made, the subject should be placed so that all shadows take a downward course at an angle of about 45 degrees, and to get this result the operator should first place the subject outward from one edge of the window, the same distance that the window measures in height. If the window is, say, ten feet high from the lower ledge, the subject should be out in the room about ten feet. This is simply a starting point, however, for more is to follow if good full lengths are to be had. After placing the subject, have her face away from the light, as though looking out in the room, and the operator should then take his station at the side of the window and have the subject begin to turn her face back toward the light very slowly, and when she reaches the point where the shadow from the nose and the shadow on the edge of the cheek *almost* come together have her hold the position for a few minutes so the operator can study the lighting. Now notice carefully just here. The two shadows should just barely be separated, for everything hangs on this position. After this point is reached the operator should examine the shadow from the nose very carefully, and if it runs out on the shadow cheek in a horizontal direction, it shows too much sidelight. This will be the case if the lower ledge of the window is below the subject's head, as is the rule with windows in homes. Now, the curtain comes into the game. It being on the lower ledge of the window, all the operator has to do is draw it slowly upward until he sees the shadow from the nose gradually going downward, and he should draw it up until the shadow *just does touch the corner of the mouth*. Next the operator should look to the light side of the subject's face. If there is a decided shadow shown in the centre of her cheek on that side it shows she is too far up to the centre of the light. Just here it is rather hard to make myself understood, so I ask the reader to go over this carefully. Refer to the diagram when in doubt, and it will aid in understanding better. If the subject is placed so there is some backlight falling on her face, it, of course,



throws a shadow ahead of it, and if the cheek bones are somewhat prominent they will throw a shadow in the centre of the cheek, making her look several years older than is actually so; therefore, she should be placed so all of the light that falls on her should fall from the front. Now look into the drapery, and especially into the parts near the floor. If the texture of the goods can be seen, there is plenty of detail. If it cannot be seen, of course, it cannot be gotten. There is no use exposing a plate on anything that cannot be clearly seen, for what is not there cannot be made to appear in the negative. If there is no detail in the darkest parts of the drapery, a side reflector of white goods must be used to throw a little light into the dark parts. If this does not bring out the detail as much as desired, the upper sash of the window will have to be covered with a white cloth so the light on the face is much softer and toned down, so it comes into better harmony with the dark parts. The principle here is the same as in photographing a room in which there are windows. If the corners of the room show no detail and a white curtain is drawn over the windows the detail will come out in the corners, by reason of the fact that the windows are brought down in intensity of light until they harmonize with the corners; the same in getting detail in the dark parts of the drapery. *Now* comes the great bugbear of all operators, amateur and professional alike, and that is *exposure*. Just stop and think for a moment. After having arranged the lighting as described, what are you going to expose for? Will you expose for the lightest parts or will you expose for the darkest parts? If for the former, what becomes of the latter? If for the latter, what becomes of the former? Well, the situation is just this: The sole object we had in getting detail in the deepest shadows was to show it in the finished print, and if we now undertime the plate for those shadows we undo all we have done in the lighting, and no detail is the result. Therefore, we must time for the parts we want to show and remember it takes longer time to get the shadows than it does the highlights. When the exposure is made for the shadows, then we must forget all about the shadows, for from that time on our attention must be devoted to developing for the *highlights*. Now, suppose we developed for the shadows, the result would be the negative would be overdeveloped, and we would again have a harsh effect, due to the highlights building up on top of each other until we could not tell one from the other. But if we stop developing as soon as the highest light is done, every part of that negative will fall into its place. Some seem to think if they stop when the highest light is done the shadows will be underdeveloped. Not so, for we timed the plate long enough to make those shadows come into their place with the highlights. Now, here is where the amateur has his greatest trouble in making full figures by the window, and I have, at the risk of being tiresome, placed the matter before the reader in as detailed a manner as possible, for if he is to make successful full figures he must get detail in *all* parts of his plate. I will refer the reader to the illustration used in connection with this article, and which shows detail in every part of the figure, notwithstanding the fact that the dress was of black goods. *But exposure had to be given to get it.*

A Few Remarks on the Multi Speed Shutter

By Nathan T. Beers, M. D.

MY ATTENTION was called to this new shutter over a year ago by one of my fellow club members who had seen the first model, and a few weeks later I was able to obtain a copy of the first circular issued by the company. The claims made for the new shutter, in this circular, seemed so extravagant as to border on the absurd, but being disgusted with focal-plane shutters in high-speed work, with their aggravating distortion and the endless manipulations of the negative in the darkroom, I resolved to investigate the new shutter, and placed my order.

My friend, F. A. Walter, whose speed pictures of horse shows, yacht races, etc., have been the feature of many magazine articles, also became greatly interested in the shutter after seeing the circular, and, being a man of action, placed an order in advance of mine.

Early this spring his shutter arrived and we started out together to make some comparative tests. He had his $9\frac{1}{2}$ -inch lens (Goerz. Series III) fitted to the shutter and used an 8 x 10 camera. I took my 4 x 5 reflecting camera, fitted with an *f*.6.5 Cooke lens of $8\frac{1}{2}$ -inch focus. We used the same brand of fast plates and exposed at the same objects. We developed the plates in the same pyro developer, in the same tray. In all of the exposures he had exactly halved my exposures, that is, if I gave a group of boys playing baseball an exposure of 1-800 second, he gave the same group an exposure of 1-1600 second. Our resulting negatives were, frankly, not to be compared. His negatives, in every instance taken at half the speed of mine, and usually on the shady side of the object, were fully timed and perfect specimens, as

one or two here reproduced will show. The detail in the shadows, the modeling in the faces, the wonderful depth of focus given by the long-focus lens used wide open, and the absolute freedom from distortion in all of the negatives conspired to convince us that the inventor had solved the problem of speed photography.

My new equipment soon arrived, and since then I have made dozens of exposures on every possible subject and in all conditions of light and weather. It is needless to say that my other cameras lie abandoned on the shelf. All of the pictures here shown were made with a 4a Folding Kodak fitted with a Multi-Speed shutter and an 8½-inch Series III Cooke lens, the lens being used wide open in every instance. All of the negatives were made on N. C. Kodak film (which I am fully convinced is quite as fast as any plate made), and the developing was done in a Kodak tank with the Kodak powders. I make these statements in order to show that no special brand of plate is necessary, nor special manipulation in developing required, when using the Multi-Speed shutter.

The new shutter may be used on any camera of sufficient size to enclose it. A new model is being devised for the smaller hand cameras. While its cost is not great, it is handsomely made, fool-proof in operation, and practically indestructible.

The new shutter has one marked feature of superiority over the focal-plane shutter: Distortion is impossible. There is no egg-shaping of the wheels of a vehicle, no slanting of the image. Everything appears natural and properly shaped.

I am reproducing with this article a photo of a lady riding horseback at a quick trot. The exposure was made in 1-1500 second at a distance of thirty feet, the lens wide open and the focusing scale set at twenty-five feet. One will observe that the horse's feet are well stopped and the distance is in fair definition. The young lady has just received the blue ribbon in a horse show.

Another picture shows a group of young people standing on the ground ready to jump into the air. This exposure was 1-200 second. Compare this picture with the one which follows in which an exposure of 1-1500 second was given. They are all off the ground. They are well stopped, and still there is plenty of detail in the shadows. In fact, it is hard to decide which negative is the better. They were taken on the same roll of film and tanked together. They are both straight prints from untouched negatives.

In most of my pictures here shown the exposures were too short; twice the exposure would have been sufficient to stop the object, but I was enthusiastic and anxious to see just what the shutter would do at the highest speeds. Since seeing some of the photos made by Mr. Walter at the Bay Shore horse show (see picture of high-stepping horse being driven) I am convinced of this.

The picture of the gentlemen jumping from the piazza-rail was made in 1-2000 second. An exposure of 1-600 second would, no doubt, have been



PHOTOS BY NATHAN T. BEERS, M. D.

sufficient. The young lady striking at the tennis ball was also taken at 1-2000 second, which was much too quick. But what I desire to call attention to is the fact that it makes very little difference what exposure you give with the Multi-Speed shutter so long as it is fast enough to stop the object. There is always good detail in even the thinnest negatives, made in bad weather, and intensification will give a good printing negative.

Possibly the greatest advantage which the new shutter holds over the focal-plane lies in its ability to increase its speed without reducing the volume of light admitted to the plate. With the focal-plane shutter, increased speed means using a narrower slit, thereby reducing the exposure of the plate. For instance, "whenever the shutter is run on highest tensions with 1-inch slit, and the speed is doubled, the plate receives but half the light and half the time; consequently, it is only one-quarter as strongly exposed. If $\frac{1}{4}$ -inch slit is used, the plate receives but one-sixteenth, and with $\frac{1}{8}$ -inch slit but one-sixty-fourth as much as with the 1-inch slit." With the new shutter, all is different; the time only is changed, the illumination remains the same. Therefore, if the speed is increased eight times, the plate receives but one-eighth, as against one-sixty-fourth with the focal plane.

As the new shutter insures such a wonderful depth of focus it recommends itself at once to the speed photographer who has been burdened with a big reflecting camera which he must focus accurately and into which he must look until his object crosses the plate. With the Multi-Speed shutter, all is changed. Long-focus lenses give better depth of focus than the shorter ones when used with the new shutter. This seems paradoxical, but it is, nevertheless, borne out in fact. The photographer needs but to attach the new shutter to his ordinary view camera, place a direct view-finder on the top, set his focusing scale at twenty-five feet for an 8-inch lens, or at thirty feet for a $9\frac{1}{2}$ -inch lens, and he is ready for the day's work. Let us assume that he is photographing a high-stepping horse. He sets his shutter at 1-600 second. He then holds his camera on a level with his eyes and follows the horse through the finder until he gets the horse's feet in the position he desires, when he presses the release. He has not been obliged to look down into any hood, and he has the horse in direct view all of the time. If the horse was within ten feet of his set-focus, either way, the image will be sharp on his plate or film. When his day's work is over he has but to tank his exposures for twenty minutes, and his negatives will be all alike in quality, with detail in the shadows and a clearly defined background.

Slow instantaneous exposures from 6 seconds to 1-200 may be made by attaching the piston-rod of the air-chamber to the handle of the driving-ring. These exposures are absolutely noiseless and make the shutter exceedingly valuable to the naturalist and baby-photographer. These slow exposures affect in no way the added depth of focus which the shutter gives. In portrait or landscape work one may get a beautiful diffusion over the whole plate by simply advancing the focus slightly.



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DECEMBER, 1907

The Germans have a happy expression in *auf weiderschen* (till we meet again), and it conveys that sincere friendly feeling that we all wish for—that which comes direct from the heart. Your editor wishes to say *auf weiderschen*, and with the hope of seeing you again enrolled in THE CAMERA family. With this issue for December, completing the eleventh volume, we look upon the results attained through our past efforts with pride and considerable gratification. Our best wishes and thanks are extended to our many readers for their support.

In 1908, if we can do so, we are going to try to do better than we have in the years gone by. Originally THE CAMERA was but a little 16-page monthly, the hobby of its editor, and that hobby has never ceased to be a hobby and is stronger to-day than before. The love of photography and the many chances it offers to a man to cultivate his innate taste for the artistic—even though he be a tyro—cannot be estimated upon paper, nor can it be conveyed unless the proper appreciation of beauty and art is in the mind and heart of the reader.

It is pleasant to become retrospective. The happy thought that you have helped

many over stumbling-blocks is indeed the height of happiness. We have endeavored to do so, and we believe that we have done so, and it is our desire to continue the work in this good field.

Since the editor took up newspaper work, some thirty-two years ago, as a schoolboy, and in after life continued in practically the same line as a printer and publisher, many changes naturally occurred. Good friends passed away and many magazines as well. In completing the eleven years of life given to THE CAMERA, not less than eighteen other photographic magazines fell by the wayside, and there are but five magazines in the field to-day that antedate THE CAMERA. Many times we have been asked to make THE CAMERA a weekly magazine instead of a monthly. Due consideration was given the subject, but THE CAMERA and its editor felt that another magazine, which would cover the weekly field, would be more desirable—hence the starting of the *Bulletin of Photography* last August. The latter was a venture, 'tis true, but the venture promises permanency, and neither magazine conflicts with the other.

1907 has been a year of many photographic improvements—probably, outside of the year of the introduction of the dry plate or that of the roll film, no year has been so blessed. We cannot, just here, tell of the many improvements and inventions, but the one paramount, is the Lumière color photography or the autochrome plate. At this writing we are working on the color line—but our experience must be told later.

1908 has many good things in store for it, and THE CAMERA will be to the front as of yore. Our staff of writers will be increased, and though too early at this time to make a detailed statement, changes in many things for our mutual betterment are in contemplation.



The design on our front cover this month is the idea of Miss Belle Johnson, of Monroe City, Mo. Last December we used the wreath and Miss Johnson, with her customary progressiveness, punched a hole through the cover of THE CAMERA and had Kitty pose for our December, 1907, cover. The idea is novel, and we trust that the infant Kitty will prove a good mascot for 1908.

Our appeal for aid for the Home for Blind Babies in Brooklyn, N. Y., in the November *CAMERA*, has been productive of greater results than we anticipated, but the Home is just short \$400 towards paying off the mortgage. Will you help?

Mr. Geo. B. Palmer, of Williamson, W. Va., read the notice and went around among 25 of his friends. He has sent us their checks amounting to \$24.50; and "Subscriber" sent us \$2.00, which we have remitted to the Home.

✱

The term astigmatism is sometimes applied to a lens, but no camera lens, strictly speaking, has astigmatism in the sense in which it is usually applied to defective vision. Astigmatism is that property possessed by cylindrical lenses and combinations of cylindrical with spherical lenses, of bringing a beam of light to a focal line instead of a focal point. The eyes of some people, owing to the curvature of the cornea being unequal in different meridians about the axis, possess this peculiarity. It is remedied by the optician by applying cylindrical lenses having an equal and opposite amount of astigmatism. The term astigmatism is correctly applied to cylindrical lenses, since the adjective literally means "not bringing to a point," while stigmatic implies bringing to a point; so that when you hear the term applied to a lens you may understand its signification.

As we have said, no lens used in photography is really astigmatic. Oblique rays passing through the lens may fail of being brought to an exact point, they may give a sort of blur or coma, or they may give focal lines at different distances, a short line at a tangent nearer on towards the lens and a short radial line further out.

A camera lens having this defect produces, at the margins of the picture, a streaky effect, especially if the image should happen to be that produced from the foliage of trees, or anything having a multitude of small points of reflected light.

There will be a kind of concentric streakiness if the plate is too near in, and a kind of radiating streakiness if the plate is further out, the central part, however, being well defined.

✱

There are so many photographers using postal cards for portrait work, especially at this time of the year, in anticipation

of the holiday trade, that a card coated with Professional Cyko emulsion, to produce soft prints from contrasty negatives, has been persistently urged on the manufacturers of Cyko, who announce that they are in a position to supply Professional Cyko cards of semi-matte surface, in boxes of 500 and 1,000 cards only, at \$8.50 per thousand, net. The cardboard will be the same as used for the regular Cyko card, i.e., pure linen stock of standard weight and of the highest grade of texture and chemical purity. This card is not intended for those who consider price the only factor, but for those who wish to build up a reputation for quality, and who have already learned from experience that in the postal card business the item of rejected prints enters more largely into the question of profit than the cost of the card. Cyko cards are uniform. They allow great latitude in printing and can be forced in development without staining or fogging. They produce soft and brilliant prints. Address The Ansco Co., Binghamton, N. Y.

✱

In the Dark Room

In the dark room, oh! my darling, where the light burns, red and low,

I am struggling with those plates, love, you exposed some days ago;

I am hoping that the image shortly will begin to show;

But I am afraid, my dear one, that these plates seem rather slow.

In the dark room, oh! my darling, I am working on them still;

I have dosed them well with soda 'til they've all commenced to frill;

There's no vestige of a highlight; naught to show thy wondrous skill;

Though I've rocked them, now, for ages, my results are simply *nil*.

In the dark room, oh! my darling; now the candle sputters out,

Leaving me in inky blackness, deeper than my darkest doubt,

Though your photographic efforts I would be the last to flout;

Are you sure you worked the shutter? Did you pull the dark slides out?

In the dark room, oh! my darling, with vindictive, fiendish glee,

I have smashed those plates in fragments, far too small for you to see;

For my soul was filled with frenzy, as I used a large-sized "D";

It was best to treat them thus, dear—best for you and best for me.—*Photography*.

John A. Hodges, F. R. P. S., a well-known writer on photography, died at Ealing, England, on October 25th, age 46. Mr. Hodges for many years was the secretary of the Royal Photographic Society.

✽

RODINAL.—What is the proportion of Rodinal to operate a 5x7 Burke & James tank? How long to develop? Are these tanks practical?—H. A. E.

One ounce Rodinal and 40 ounces water. Develop for 20 minutes. This amount just fills a 5x7 tank. Yes, the tanks are practical.

✽

The Crown Optical Co., Rochester, N. Y., have made such strides in the making of their Crown Anastigmat *f*6.8 that they are now in a position to supply orders promptly, the unusual demand making this prohibitory hitherto. In order that our readers may have an opportunity to test these lenses, no charge will be made to fit them to any camera sent the Crown people. They want you to try them, and full particulars will be sent upon making your needs known. The Crown Portrait Lens, *f*5, is especially recommended for home portrait work and has received the best endorsement of many prominent workers.

✽

The 1908 edition of *The American Annual of Photography* will be ready in a few days, and from the advance sheets we have seen, it is going to surpass its predecessors. The book will be of 350 pages, containing 300 illustrations and fully fifty practical articles upon photographic topics, including thirty-two pages in color. As the book gets out of print within a few days after publication, you'd better order a copy at once. Price (paper covers), 75 cents; cloth bound (Library Edition), \$1.25. Postage extra. Paper covers, 17 cents; cloth bound, 22 cents. George Murphy, Inc., trade agents, New York. Or orders may be sent direct to THE CAMERA.

The New York Camera Exchange, 114 Fulton street, New York, have many bargains to offer during the holidays, notably a number of 5 x 7 Anthony's (leather covered) Compact Cameras, without lenses, at ridiculous prices. Speaking about lenses, they've a number of high-grade lenses and exchanged cameras at prices that will appeal to the bargain hunter.

✽

Although we are not in the book-selling business, the number of sales we have made of Professor Beck's book, "Art Principles in Portrait Photography," have been truly phenomenal. We'll send the book, post free, for \$3.20; or send THE CAMERA for one year and the book for \$3.75. Here's a chance to make two distinct Christmas gifts to as many friends, and at a little cost.

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A short time ago Mr. Claudy wrote an interesting article about "Tank Development" in THE CAMERA, and no article has ever been so broadly quoted, at home and abroad, as this paper in question. He particularly referred to the Kodak tank and the Kodak method. The tank is here to stay, and if you are wise you'll get next to a good thing. The dealers generally will be glad to give you Kodak tank literature.

✽

A few weeks ago we visited a well-known professional brother and found him acting like a man with the *delirium tremens*, and this agitation was caused by a poor, innocent babe. He had exposed a dozen plates and every negative had from ten to twenty wiggles of an image upon it. We advised him to try a Pohle-Werner Baby Holder and see if he couldn't get some results with the use of that apparatus. A six-dollar money order got one in short order, and, like the fairy story, "he lived happy ever afterwards." Perhaps you may have the same troubles, and a request for a booklet to 9 West Chippewa street, Buffalo, N. Y., will be a revelation to you.

In the matter of photographic optics, the more we delve into the subject the more mixed up we become. The famous slogan of the Gundlach-Manhattan Optical Company, Rochester, N. Y., "It's all in the lens," is fully told in an interesting catalogue they have, and a copy can be obtained by writing Desk 804 for it. You'll find it a mine of good information.

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Among the many novelties that are offered for the Christmas trade we are pleased to note the introduction of three new Metal Tripods, introduced by G. Gennert, of New York and Chicago. The first of these consists of a flat top, four-sections tripod, in brass, opening to the regular height, but closing in such a manner that when in its case it resembles an elongated cigar-case. This is accomplished by a specially shaped aluminum top, which is certainly one of the most ingenious novelties brought to our notice for a long time. The second tripod mentioned is similar to the one already described, excepting that the legs are of aluminum, which makes it very portable and mainly suited for a lady's use. The third of these tripods has a universal ball and socket top, which enables the user to tilt or twist the camera in any manner desired without the necessity of loosening the tripod screw each time.

We are also pleased to note that G. Gennert has now a full stock of the celebrated Ensign Films. This film has been used for many years in England, where it is recognized as one of the finest and most regular roll film ever offered. Those of our readers who are film workers should send to the importer for descriptive circulars, which will give them far more information than the limited space at our disposal will permit.

The Ortol developer of Messrs. Hauff & Co., for which G. Gennert are trade agents, has been so popular that they are now offering the same in the form of a single cartridge. This is dissolved in the same manner as the regular M. Q. tube, giving a developer which can be used for plates, films or paper with unqualified success. We understand that this firm is making extensive preparations for the early spring trade, and wish them every success in their enterprise.

Folmer & Schwing have a most interesting and instructive series of lantern slides, which they intend loaning to camera clubs, photographic societies, schools and other organizations interested in photography. These slides will be ready some time in December, and clubs desiring the use of this collection are invited to correspond with the Folmer & Schwing Division, Eastman Kodak Company, Rochester, N. Y.

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Andrew J. Lloyd & Co., 315 Washington St., Boston, continue to make favorable reports about the Thornton-Pickard Shutter. It seems as if the repairs to be done on these marvelous instruments grow less and less every year. In the meantime they are constantly in receipt from all over the country of perfectly wonderful pictures taken by the rapid Focal Plane Shutter. The demand for time and Instantaneous shutters by amateurs continues unabated.

✽

Photograms of the Year 1907; a magnificent volume which no pictorial worker can afford to do without. Beautifully printed on art paper, paper covers, \$1.00; cloth bound, \$1.50. Tennant & Ward, American Agents, 287 Fourth avenue, New York.

We have just received this ever-welcome annual of photographic art, doubly appreciated; first, for its universal photographic presentation of the different phases of æsthetic feeling in photography, and second, for the valuable comments and literary criticism of the pictures.

Nearly two hundred representative photographs are presented, the principal pictures of the Royal Photographic Society's Exhibition and the Salon and many others of the French and German school. A complete representation of American work makes it most interesting.

The critique of Mr. H. Snowden Ward on the work of the English photo artists and the remarks of Mr. Fayette J. Clute, Demachy and Matthies-Masuren furnish most excellent reading matter and valuable suggestions to all striving for pictorial effect.

Altogether, *Photograms for 1907* is a book which no progressive photographer would dare to miss, especially when one considers the low price at which it is offered.

The Goodwin Film and Camera Company, of Binghamton, N. Y., has lost no time in reconstructing its film plant, which was totally destroyed by fire last September. It is announced that the new concrete building, which is almost finished, will be one of the most carefully planned film factories in the world. The new plant will be ready to market Ansco films again on or about January 1, proximo, and we know that the many sellers and users of Ansco films will welcome this news and will join us in expressing admiration for the spirit of enterprise which has made possible in so short a time the building and equipping of a large plant, one requiring special machinery.

✽

No other firm in the Eastern States import or handle such a medley of good things as the house of Murphy, 57 E. 9th St., New York. To mention their entire line would almost require the pages of an encyclopedia. Whatever they have is good and not of the makeshift order. Whether it be Ross Portrait Lenses or Ross Homocentric Lenses, or the Eagle Flash Lamp (adapted for all kinds of work and portraiture), or Peerless Flash Lamp (a magazine lamp for repeated flashes), or the Eagle Vignetter, or the Eagle Adjustable

Developing Tank, or Elmendorf's Lantern Slide Colors, or the Dixie Vignetter, or the Non-Slipping Printing Frame (4x5 only), or *The American Annual of Photography*, or *The British Journal Almanac*, they are the best of their kind. Speaking of the *British Journal Almanac*, that will be ready in a few days, and you'll get about 1,500 pages of reading matter for a half dollar. The postage is 27 cents extra.

✽

Photographers who aim at artistic portraiture will be interested in the new Cooke portrait lens, Series VI, working at *f*5.6, fitted with an ingenious diffusing and diaphragm arrangement. The illustration herewith will give some idea of the lens when fitted to the camera. There are two cards at each side of the camera near the back. By pulling one of them the photographer can secure any desired amount of diffusion. The other cord operates the iris diaphragm, so that the operator can focus and adjust the diaphragm without having to pass to the front of the camera. The advantage of this will be apparent to all professionals. The lens fitted with pulleys and cords sells: 13 in., \$135; 16 in., \$190; 18 in., \$220. Taylor, Taylor & Hobson, Twenty-sixth and Broadway, New York.

The Carl Zeiss Tessar Series 11-B $f.6.3$ is now furnished in cells for use in the No. 3 A or No. 4 Folding Kodaks. This lens is of $6\frac{1}{2}$ inches focus, so that the Automatic Focusing catch on these cameras can be used. This lens, with the new model Kailos Shutter (speeds 1 to 1-300 of a second), makes a particularly attractive optical equipment for hand cameras. E. B. Meyrowitz, 104 East 23d street, New York, sole American agent



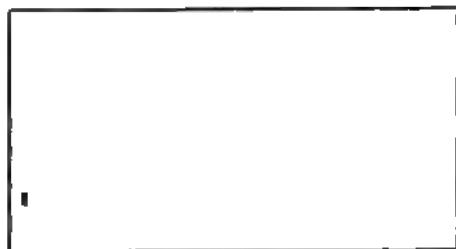
The makers of Cooke anastigmats have recently called our attention to an interesting feature of their lenses. It is claimed that if a Cooke lens be held towards a lighted window and examined, side by side, with an ordinary cemented lens of six or more glasses, the "Cooke" glasses appear distinctly clearer and more colorless. A sheet of white paper, well lighted, shows the difference, perhaps, even better. This is due, it is said, to the absence of cement, and to the fact that three glasses are used instead of six more. It is this feature that enables the makers to claim so confidently the greater speed of Cooke anastigmats as compared with others of equal focus and aperture. Fair comparison is invited, and the offer seems to us reasonable. The Cooke people, Taylor, Taylor & Hobson, are at 26th and Broadway, New York.



One might have supposed that the ground had been so thoroughly ploughed up in the optical field that no original idea could be brought to the surface as distinctly new as the formula that the Messrs. R. & J. Beck, the old renowned manufacturers of high-grade optical instruments, have evolved in their new anastigmat lens known as the "Isostigmat."

Formerly it was the case that all manufacturers of lenses, known under the type of anastigmats, conformed to a theory known as the "Petzval Condition," which, on account of the deep concavity of the individual lenses, required the making of these lenses one at a time and that these lenses should be cemented together; whereas, the isostigmars, having shallow concavities, are ground many at a time and are

not cemented together. This, it is evident, results in reducing the cost of manufacture and places this new lens in the hands of many photographers, who thus far have been unable to possess a high-grade lens. Messrs. Beck have, under this new formula, manufactured a lens which has unusual qualities; first, that it is high grade; and, second, that it is manufactured at a very low price, less than half the price of the ordinary anastigmats. The careful tests that have been made on this lens at the National Physical Laboratory of Teddington, London, show that, notwithstanding the fact that there are ten glass air surfaces, there is no flare spot; and that there is no visible defect, such as striae, veins, etc.; and that, notwithstanding the fact that the lenses are not cemented to-



gether, the relative centreing of the surfaces is entirely satisfactory. Further examination shows that the definition at the centre of the plate with largest stop was excellent and that this definition was satisfactory over the entire plate with the full opening, marked $f.5.8$. "The plate having been focused at the centre of the field, with the largest stop, for an infinitely distant object, the movement necessary to bring it into focus, when the aperture is limited to a zone of the lens, lies between $+0.00$ cm. and -0.00 cm. The observations are usually made for zones of width one-sixth of the diameter of the largest stop. The plate having been focused in the centre of the field for white light, the movement necessary to bring it into focus for blue light is 0.00 cm.; and for red light is -0.02 cm." This shows how wonderfully well corrected the lens is for achromatism.

These lenses are imported by Williams, Brown & Earle, Philadelphia

The Rochester Optical Co. announce a new member of the Premo family in the new Premo Junior. This is a camera just suitable for the little chaps or the beginners in photography, is of the box type, and makes a picture $2\frac{1}{4} \times 3\frac{1}{4}$. Of course, it is daylight loading and uses the famous Premo Film Pack. A number of other good things will be found announced in the Premo Christmas folder. You can get a copy from your nearest dealer.

The amateur frequently wishes a vignettied portrait similar to that made by his professional brother, but the bothersome part is the "know how." This is all prepared for you with the Morrison Vignetter, made by Burke & James, Chicago. The vignetter is so made as to fit in front of any camera, and is sold at the remarkably low price of 50 cents. Burke & James have fully a thousand other good things in photography that they specialize, and a copy of their catalogue will be of material assistance. Ask particularly about the B. & J. enlarging lanterns—they should interest you.

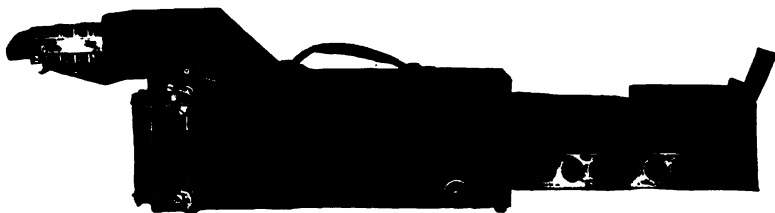
Among the many photographic instruments supplied by Folmer & Schwing, few have created greater interest than the Naturalist Graflex, an especially designed instrument for those interested in biological research as applied to securing photographs of wild birds and animals in their native haunts. The peculiar construction permits the use of lenses of extremely long focus or telephoto lenses; in fact, the camera will accept lenses having a focus as great as 26 inches, or as little as $12\frac{3}{4}$ inches. The special construction of the focusing device permits the operator to remain partially concealed while focusing and making exposure, a valuable feature in photographing wild life. Additional information about the Naturalist Graflex will be supplied by the Folmer & Schwing Division, Eastman Kodak Company, Rochester, N. Y.

The Voigtlaender & Son Optical Co., 127 W. 23d St., New York, have placed their celebrated "Dynar" lenses in handsome boxes, suitable for holiday gifts. In speaking of the "Dynar," they are so made that they can be adapted to the standard shutters on the market for hand cameras, and the purchaser can do the fitting without any difficulty. The famous Collinear's may also be readily adapted for hand-camera users.

• Interesting booklets will tell you more about the Voigtlaender's and can be had of your dealer, or upon request to the makers.

From the students of the Illinois College of Photography, at Effingham, Ills., we have been receiving highly satisfactory reports of the thoroughness of their method of teaching. These compliments we know are deserved, as our personal investigation of the college a few years ago showed its completeness. Photoengraving is one of the things also taught by the college, under the title of Bissell College of Photo-engraving, and has gained the support of the principal photo-engravers throughout the country. Write for descriptive booklets and terms.

The slogan adopted by the makers of the Moore Push-Pin (also called Kodak Push-Pins), "Here's a pin—push it in," solves really many a problem at both the office and at home. For photography their uses are so numerous that we shall not dwell upon them, but for hanging up anything desired, without marring walls, or for making pen racks, hanging curtains, dressing show cases, or any work requiring "hanging up," they are indeed a boon of lasting use. A sample trial half dozen will be mailed upon receipt of ten cents if sent to Moore Push-Pin Co., 119 S. 11th St., Philadelphia, or they may be had of all dealers.



In response to the demand for good paints for coloring photographs, lantern slides, etc., Milton Bradley Co., Springfield, Mass., have prepared a special box of colors, known as "Bradley's Transparent Water Colors." The box contains twelve wooden pans of indelible paints, by the combination of which all tints and shades are readily obtained. The consistency of the paint is such as to produce a color of sufficient strength to give the desired tint, with a transparency which loses none of the details of the picture.



The Mirmont Photo Paper Co., Department B, Glendale, Brooklyn, N. Y., have just placed on the market their New York Linen Bromide, a most delightful paper with a surface of pure linen texture on imported buff stock, and coated with a soft, brilliant, rich emulsion, creates a combination that is not only an extreme novelty, but a necessity to all advanced bromide workers. Send fifty cents for a trial dozen, 6½ x 8½ size, or seventy-five cents for 8 x 10 size, including developer, sample print and full instructions.

Three Hundred Babies Wanted

With the November issue *The Delineator* started a Child-Rescue Campaign, the bringing into the home that needs a child the child that needs a home. There are 2,000,000 homes in America that know not the joys that children bring. There are 25,000 children in New York alone who know not what home means.

We started this campaign with fear and doubt. To ask strangers to us to adopt these little ones equally strangers to us seemed daring indeed. And we could appeal to only a million homes, the million homes into which *The Delineator* goes—not one-twentieth of all the homes in this great country. Caution made us tell the stories of only two. We feared that even these might not be asked for. We doubted the greatness of the great American heart. We doubted, and we are ashamed.

Over two hundred eager hands have already been extended. Three hundred requests for these little ones—for any homeless little one—have already been received through the mails. Women have come for miles away into our building asking for

these precious ones; men have journeyed a thousand miles to beg one for their homes. We told their story; we appealed to our worshiped American womanhood, and it hastens to take these little ones into its heart. We continue this campaign for homes for other homeless waifs in the December *Delineator*. We shall keep on with it. If one brief appeal to one-twentieth of the homes in America can bring this result, what of good may we not yet do?

The Child-Rescue Campaign, the homeless child, the childless home, the bringing of these little ones into the homes where little ones are needed, this movement is of our pride and of our heart. And you—will you make it of your heart? Will you give us such assistance as you can?

THE DELINEATOR,
Butterick Building, New York.

Snow Pictures

The very first thing to consider is snow pictures, and in truth we might say in any sort of pictures, is the general effect. Attention to this consideration is sometimes neglected to the great destruction of the light and shadow in the picture. The scene is so bright and dazzling that one is deceived, and sometimes a large object in the immediate foreground will come out too dull in comparison with the rest of the view.

Great danger arises from harshness, the high lights are so brilliant and the shadows so intense. It should be remembered that too great contrast is at expense of gradation, and the object is to secure such gradations in the high lights especially. There is liability also of encountering spottiness or patchy effects, instead of breadth, by proper contrast of masses of light and shade.

There is a good deal more local color in a snow scene than one imagines. Look, for instance, at the colors the shadows take, and in addition there is often an atmospheric haze in the shadows occasioned by vapor from the melting snow. All these beauties the snow painter perceives and makes them tell in his picture; but they are rather hostile to the lens. Getting a good foreground seems to be generally the great difficulty. It is usually of a non-

active color, demanding much more exposure than the snowy white background. This means overexposure for the latter if anything like correct exposure is given to the foreground. We do not want mere silhouettes for foreground from underexposure or loss of gradation in the lights by overexposure. The angle of illumination has something to do with picturesque rendering, so that one portion of snow or ice mass may be relieved against the other masses. Rocks covered with ice or icicles and snow are beautiful in this contrast, but the greatest care is demanded, and judgment too, both in exposure and in development.

Undertiming is as bad, if not worse, than overtuning. Too strong development—a developer with the reducing agent in excess—is to be avoided.

Judicious dilution is recommended, the avoidance of alt bromide and a slight excess of alkali.

We have found Metol to act better than any other agent for snow development, metol and soda. If density is found necessary to give proper value to the scene we would recommend the addition of sulphite of sodium with every portion of the carbonate of soda, according to the way the plate develops.

These remarks about snow pictures were called forth by examination of the prints on the subject for competition. We noticed many of the failings to which we have called attention.

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Most of our readers will naturally wish to use flashlight photography from now on, and this and that powder is recommended. Of course there are lots of good flash-powders on the market—they all claim to put daylight in the dark—but safety is the first consideration. The Eastman Flash Sheets are about the handiest things to employ in flashlight work imaginable. A writer in *THE CAMERA* recently stated that he could "pin up as many as he wished and get whatever light he wanted. Pin the things to a board with the Kodak Push Pins, touch a match to the one flash sheet on the lowest corner, and you have daylight galore." The Eastman Flash Sheets are something worth looking into.

Monochrome in Landscape Work

Kindly Note-book! What a relief it is to jot down one's thoughts without having to weigh them, and polish them, and sign them—present freedom without future responsibility.

Lately I have had to spend much time at the National Gallery, and two things have impressed themselves on my mind with exceeding great force; the first is that no one painting in solid oils or tempera, in the usual manner, has succeeded in giving a vivid impression of open air in sunshine or shadow; the second is that the photographs of most of the landscapes in the gallery give a far true impression of the open air than the originals. I may be right or I may be wrong; in fact, I should not care to take a permanent responsibility for these statements in a signed article. It would be interesting to hear other views on this subject.

Piero di Cosimo paints a vivid dashing open-air scene in "The Death of Procris," room No. 1; date, end of fifteenth century. The color and painting of the grass in the foreground may not be true to nature, but the distance is fine, and I cannot find another picture in the gallery which gives a stronger feeling of the open air. Filippino Lippi gives me a subdued sensation of *en plein air* in the large "Virgin and Child, with SS. Jerome and Dominick," which is hung in the same room. But I walk right through the Umbrian and Venetian and Dutch rooms and cannot get a single glimpse of open air until I reach Velasquez's "Duel Sketch," which gives nature in a low but true key. In the English school Turner sometimes suggests open air; so does Old Chrome; but the beautiful compositions of Constable convey absolutely no outdoor feeling to my senses. In Hobbema's "Avenue," one of the most beautiful compositions ever painted, I breathe paint, and dull, heavy paint at that, not air.

But when I look at photographs, or even half-tone reproductions of the best of these landscapes, I at once feel that I am out of doors; and I get not only the beautiful composition depicted in the landscapes, but a sensation of light and color and atmosphere as well.

If I am right in my present sensations about these pictures—and my bringing up

has been so good and orthodox that I doubt my own senses in this matter—it must be impossible to paint open air in solid shaded oil colors, and it can only be painted by means of the science trick of the French Impressionists. I use this term in admiration of the Frenchmen's ingenuity, and not offensively; and it seems to me that outdoor nature cannot be depicted by the mixing, and laying on, and shading of oil colors; but that the pure colors must be kept separate, and laid on side by side in touches of pure color, and mixed and blended by the confusion of the spectator's eye, in order to suggest the true brilliancy of nature. I tried it for myself; I painted a blade of grass in light blue, and laid beside it two strokes of light bright yellow, and, viewed at a little distance, the grass blade seemed painted in vivid green; try as I would, I could not mix a green one-tenth as vivid. Velasquez nearly caught the Frenchman's trick, and obtains his effect in the "Duel Sketch" by means of small patches of strong or bright color.

And when one comes to think of it, oil paint laid on solid is a very dead object. The light does not shine through it and so reach the eye, as in a transparency; it does not shine through a thin film of semi-transparent pigment, to be reflected back by the white paper beneath, as in a water color. In an oil painting the light shines on masses of mixed and solid color, and so much is absorbed that there is not sufficient left to reflect back a feeling of open air. Think of the yellow and blue rays striking on the particles of blue and yellow pigment, which have been mixed to give a green, and think how these rays must be stopped and broken up and lost and worried by the unsympathetic particles of contrary pigment, until they lose all virility. I have a little picture of Italy which exudes sunshine at every pore. It is not really a picture, only a confused mass of blue, and yellow, and purple, and red, and pink brush strokes; but when I look at it from a little distance I want to walk through the picture frame and out into the shimmering, scintillating streets of Florence. It is just a clever science-trick, but oh how infinitely more true than the finest landscape of the greatest of the Old Masters!

The values and technique of the great

ones, such as Constable, must have been right, because really good photographs of their works are so right and convincing. Undoubtedly these pictures looked right to the cultured critics of past generations. I wonder if my taste has been vitiated, or elevated by the French Impressionists?

When a new generation of critics has arisen and the Impressionist work has soaked into our systems, I wonder whether Constable, and Hobbema, and the rest will be regarded as matchless in composition but archaic in coloring? I wonder whether photographs of these old landscape works will take the place of the originals in artistic taste? I wonder whether pictorial art will be divided into impressionist color works, and works in monochrome, and landscape photography come into her kingdom? For a good monochrome can suggest air and color more forcibly than the word painting of the cleverest writer; whereas a painting in the ordinary solid colors, by its partial success in the rendering of air and color, fails to convey these qualities.—*The Amateur Photographer*.

✽

Enlarged Negatives—An Economical Method

There is nothing very difficult in the method I am about to describe, and it has many recommendations for the production of large work for exhibition and other purposes. Splendid results are obtained with a minimum of labor, time and expense.

Make an ordinary untuned and unfixed P.O.P. print from the original small negative, modifying the printing to any requirements, faking, adding clouds and so forth. The printing must be carried on until we obtain the amount of detail and depth we require in the final enlarged print, and the fact that no toning or fixing is to intervene, allows of this being judged accurately. Place the print on a piece of plate glass face downwards in an ordinary printing frame and secure the back. Thus the print is kept perfectly flat, and the trouble of surface reflections is avoided.

The printing frame is then placed upon the stand immediately in front of the camera, and takes the place of an easel. In the enlarging camera insert the lens, which may be the one with which the original negative

was made, and focus to the required size, making the exposure upon bromide paper.

In the plate-holder I place a piece of glass without flaws, upon which to lay the bromide paper, and this is kept in perfect contact by laying an opaque glass behind it. In focusing I make allowance for the thickness of the glass.

I do not trouble to buy the negative paper, but simply use the rapid variety of the ordinary kind. By this method I obtain an enlarged paper negative upon which I can work with ease. The printing takes a little longer than a glass negative requires, but this is not a great disadvantage.

The copying must be done by artificial light to prevent the unfixed print becoming darkened. This will be convenient to those whose daylight working hours are limited or fully filled, and it has the advantage of securing a constant light. The reason I use an untuned print is twofold: first, to preserve the original smooth grainless surface; second, to prevent miscalculation or anything in the nature of chance by adopting the system of exposure which I will now explain. The fact that all my prints are the same tone exactly goes a long way to systematize this method, whereas in the older method of enlarging, scarce two exposures are alike, owing to the varied tones and strength of the transparencies used. For my exposure I use about sixty inches of magnesium ribbon twisted into two lengths containing thirty inches each, suspended from the side of the camera or the printing frame upon long hat pins, in such a manner that the copy is evenly lighted, and no light passes through the lens except that which is reflected from the copy. The focusing is done easily if a piece of type-printed matter is placed in the printing frame and a strong incandescent gaslight is used to illuminate it.

It will be evident that when the correct exposure is once obtained we may copy any number of prints under precisely similar conditions with equal success. When we wish to alter the amount of enlargement we may make an exposure with equal success by following one of two simple methods: First, by always using the same *f*/*v* value; and second, by always using one identical stop or diaphragm, as we shall now see.

For the first method. To find the working, the actual diameter of stop required for

any lens when used in copying, divide the distance from stop to ground-glass by the f number you require. To do this, bring the distance from stop to ground-glass to suitable fractions of an inch, say thirty-seconds of an inch. Divide the stops into this; the answer will be in thirty-seconds of an inch. The stop I use is marked $f/8$, but in copying the value is altered. The diameter is exactly one inch, and when copying from half-plate to 15×12 I require a camera extension of about 20 inches; thus my stop is now equivalent to $f/20$, being exactly one-twenty-sixth of camera extension. To put the first method into practice for other extensions; say we wish to find $f/20$ on an extension of 13 inches. Multiply 13×32 to bring it to thirty-seconds of an inch; this is 416; divide this number by $f/20$ and we find that minus sixteen-thirty-seconds, or one-half of an inch, is $f/20$, working with 13 inches extension. I have a number of stops varying one-thirty-second of an inch from the smallest to the largest size required when working the above system. By using the same amount of magnesium wire, burnt at the same distance, and the same r ratio, the result will be identical in each case.

In the second system we may always adhere to the same stop and the same amount of magnesium ribbon whatever our camera extension, providing we keep to one lens and always fix the ribbon to move with the camera front. This method affects the exposure itself. To prove the correctness of this by example: The distance of ribbon from copy is 13 inches with a camera extension of 24 inches, stop 1 inch diameter, equivalent to $f/24$; and in another instance the distance of ribbon from copy is 20 inches, with a camera extension of 12 inches, with a stop of 1 inch diameter. In the latter case, the light being twice the distance away, and the illumination being inverse as the square of the distance from the source of light, we must either use four times the quantity of ribbon, or adjust the stop. But the extension of my camera in this latter instance is 12 inches, with stop 1 inch diameter, the r value being $f/12$, and requiring only one-fourth the exposure of the former case, that is we save two-thirds of our ribbon.

Of course, if the ribbon had been left in the former position, 13 inches from the copy, instead of using 20 inches, 13 inches would

have sufficed. Thus we can economize in magnesium; but my own feeling is that it is better to economize in the worry of calculation.—*The Photographic Monthly*.



Purity of Chemicals in Photography

There is often a good deal of unnecessary hubbub made about the noxious effects of impure chemicals in photographic manipulations, and the exquisite photographer will go to the extent of fixing his plates in chemically pure hyposulphite of soda, or use chemically pure chloride of sodium when common salt is called for. Now, it is well to be accurate and particular, but there is no necessity of being fatal. It is more probable that mishaps occur from contamination of the chemicals in the darkroom, or from mixing corks of stopper, or carelessly pouring back waste solutions, or even from dirty fingers.

We might have chemicals supplied to the photographer which were photo-pure—that is, in which certain harmless or innocuous salts were allowed to remain, and for the price much lower than the chemically pure article.



Kodak Film and Its Manufacture

There used to be a time, and that not very long ago either, when the skillful photographer looked down upon roll film as material only fit for raw beginners, and in which most of the good qualities of the dry plate had been sacrificed to portability and to ease of changing after exposure. Dry plates were cleaner in working, less kept better, and could be orthochromatic. Films were the reverse. If there are any who still hold this view, they may take from me that it has quite ceased to be so common, and it is largely to the Kodak that we owe the change. It is worth noting, in doing justice to one of the most successful commercial products in existence, that the Kodak film has been selected as the type of this article.

Few users of Kodak film realize the extent of the enormous factory space in which they load the camera. Kodak Park, Rochester, U. S. A., where the film is made, is a factory of an altogether exceptional kind. Imagine a large and handsome city with broad expanses of grass, dotted with trees, and containing here and there occasional buildings, one of them with a tall

chimney, the highest in America. There are drives, flower beds, and a lake which serves as a swimming pool, within the borders of the park, which is four miles away from the flourishing city of Rochester, and is connected with it by an electric tram line, a branch of which runs right inside the park and up to the buildings. Such are the surroundings amidst which the Kodak film comes into existence; amidst fresh, pure air, in an equable climate, away from smoke and dust, and the other concomitants of a manufacturing city.

The film has other advantages. Not only was it the first successful celluloid film, but it is immeasurably the most widely used. While it is easily first in Great Britain, in many other parts of the world it is the only film available. It is certainly not an exaggeration to say that nine-tenths of the roll film used in the world is Kodak film. Now, although the Kodak Company has many factories in various places, we believe we are correct in saying that it has concentrated its film manufacture at Rochester entirely, and that all Kodak film, whether used in China, or England, or Timbuctoo, is made at Kodak Park. The consequence is that the manufacture is conducted on so huge a scale that every avenue of trouble can be stopped up. A highly trained staff, skilful chemists, and the most perfect machinery are some of the advantages of working on such lines, but there are others. So extensive is the manufacture, that the very materials themselves are profitably made, and so their suitability watched from the very start. Celluloid is the base, so that celluloid is made there. Pyroxyline is an important ingredient of celluloid, so that pyroxyline is manufactured there. The quality of the nitric acid used in making it is one of the most important factors in the manufacture of pyroxyline, so that nitric acid is manufactured there. In the same way, the silver nitrate used in the sensitive coating is made on the spot, and countless other examples could be given, which would serve to show the colossal nature of the industry. We pride ourselves in this country on some huge plate factories, but no one plate factory coats anything near the same area of glass per annum as is here done of celluloid.

The remarkable uniformity of Kodak film is one of the results of manufacture on so large a scale. All possible sources of irregularity are, as it were, averaged up, and, as a result, one buys a spool of film in New York, another in London, and another in Moscow, or Madras, knowing that the speed of all is practical, identical and that the same treatment that will make a good negative on one will make it on the other. There is, at this day, no more uniform photographic product than Kodak film.

So much for its manufacture. But not only is it made on a large scale, but its manufacture has been carried on at Rochester from the very earliest days of celluloid film at all. Mr. Eastman himself was the pioneer, and much of his position to-day is due to his far-seeing commercial vision, which discerned the immense future that might lie before a rollable celluloid film. The result is that at Kodak Park they have many years' practical experience to fall back upon; in fact, the management of the film factory is altogether unique in the opportunities it has had and still enjoys for knowing all that is to be known about roll film.

Now we have not set all this down merely to glorify the Kodak Company. We want to show first the causes and then the results. The causes have been stated; the results are now to be considered. The early celluloid films were, comparatively speaking, insensitive; the Kodak film to-day may be treated as on all fours with the most rapid of glass plates. In the early days all kinds of strange marks and blemishes used to make their appearance; patches seemed as though they were insensitive, and others as if they were fogged. Kodak film to-day is as clean and flawless as the best dry plate. Then, again, the film has been made orthochromatic and non-curling, and, greatest advantage of all, it has been put up in cartridges and film packs, which allow it to be loaded into the camera, and taken out again for development, in full daylight. Thirdly, by the application of time development to roll film by means of the Kodak tank developer or developing machine, all necessity for a darkroom has been dispensed with, while the making of perfect negatives has been simplified enormously.

Perhaps enough has been said to con-



vince the casual reader that the present perfection of Kodak film is the natural outcome of long extended experience and of careful manufacture on an immense scale; and perhaps also the reader, if such there be, who has been in the habit of sneering at film and film users as something quite beneath his own lofty photographic level, may be led to make a trial of the film when he is in a position to profit by its leading characteristics, lightness, freedom from breakage, compactness, and portability. If he does, he will find, possibly to his surprise, that film manufacture has made great strides during the last few years, and that a rollable film is obtainable not a whit in-

ferior to the best plates in all those respects wherein the two can be compared.

We have used many a spool of Kodak film, some sent us by the company, others purchased here or there, where the want arose, and can say that its ubiquity, its high quality, and its freedom from minor defects are a source of constant admiration. In fact, when the extreme susceptibility of a sensitive photographic film to all extraneous influences is borne in mind—influences which beset it from the earliest stages of its manufacture—the uniform excellence of Kodak film makes it, without any exception, the most remarkable commercial product of the day.—R. CHILD BAYLEY in *Photography*.

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